

Competition, collaboration and collusion; balancing company interaction within the New Zealand engineering industry

A thesis submitted in partial fulfilment of the requirements
for the Degree of Master of Engineering in Construction Management
in the Department of Civil and Natural Resource Engineering.

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November 2019

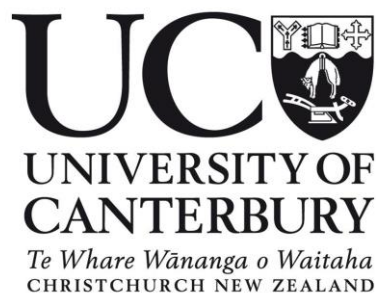


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Acknowledgements

Thank you to my senior supervisor Dr Eric Scheepbouwer and co supervisor Brian Guo for their assistance and guidance throughout this research. I would also like to thank the interviewees for taking the time to participate in this research; it could not have been completed without your assistance and insights. Finally, I thank my partner Alice for her support and motivation during a challenging period of work and study.

Executive Summary

Projects in the engineering industry are becoming larger, increasingly more complex, and requiring different, often more specialised, skills. Only a small proportion of companies have the required resources and/or capabilities to solely deliver projects of larger magnitudes. This trend is accompanied by a shift towards collaborative arrangements and partnerships. Partnering represents a fundamental shift from the traditional and adversarial relationships, which have been reported to mar the construction industry, towards a more co-operative environment. Partnering has been the subject of numerous studies, many concentrated on anecdotal success stories of improved project performance, and experiences of exemplar companies operating in foreign markets. It would appear that literature has not closely examined the rationale associated with initiating these partnerships.

To understand the rationale for partnering and identify how companies balance competitive and collaborative interactions, this research has focused on three aspects. Firstly, it quantifies factors which influence partnerships either internally or by external pressures. Secondly, it identifies and describes qualities which companies look for in a partner and serve as a point of differentiation. Finally, it uncovers the rationale behind forming partnerships and their associated implications, such as transgressing toward collusive or anti-competitive behaviours. Understanding the rationale company's employee when selecting partners could be a catalyst for shifting away from traditional, adversarial, arrangements

To investigate these aspects, exploratory research has been adopted. Information on previous project records was gathered from the NZ Transport Agency's online database and through an Official Information Act request. Project records were used to identify companies who had previously been involved in partnering and provide quantitative information. Insights from the project records, in conjunction with the literature review, formed the basis for interview questions. As people and their opinions are the focus of this research, a qualitative research method was adopted. To gather information, expert opinions were sought through semi-structured interviews. Interviews were undertaken with participants from across the industry; contractors, consultants, NZ Transport Agency, and third-party industry companies/associations. Furthermore, a Likert-type scale was used so interview participants could quantify the importance of partnering qualities. Interviews were transcribed, and thematic analysis used to develop research conclusions.

This thesis identified seven factors that influence partnerships. Project location, size and duration, and contract arrangement are four external factors, which result from industry conditions that cannot be influenced by individual companies. The three remaining factors: competitive advantage, consolidation of industry and individual perceptions are internal factors and are dependent on the actions of individual companies or people. Changes to external factors such as increases in project size and duration will influence the shift towards more collaborative arrangements and drive the consolidation of companies within the industry. This has led to an industry environment suited to existing larger companies, where competition is limited to a small pool of suppliers with a national presence. Thus, the benefits of partnering become a point of differentiation between larger companies. In addition, partnering becomes a necessity for smaller companies looking to compete.

The most sought-after qualities were soft-skills more evident in individuals than companies; trust, teamwork, integrity/respect and capability. Of the qualities considered, differentiation of a company was attributed to their people, track record and capabilities. Possessing qualities that offer a competitive advantage, and a point of difference aids companies in attracting prospective partners. For the qualities sought after in a partner, individual people were a reoccurring theme and the centre of their genesis. Qualities sought after in a partner, and the basis for which qualities are perceived, relate to individual people more than companies themselves.

As a company's rationale cannot be captured by a single sentiment, the considerations which shape decisions have been explored to understand how they affect partnering. The rationale for partnering adopted by each company differs based on their own underlying considerations; this introduces variability into partnering arrangements. As part of maximising the likelihood of winning a project, rationale is further shaped by decisions around: short and long-term; regional and national; defensive and offensive mentalities; and partnering with similar companies. With the permutation which maximises competitive advantage being the desired outcome. Short-term considerations based on winning projects dominate the industry, but there is a strong desire for long-term, sustainable relationships. Long-term partnerships provide brand consistency and allow efficiencies to be recognised from having previously worked together. It is evident that short and long-term considerations are not mutually exclusive. To support variable partnering arrangements, companies require strong, long-term relationships, particularly between individuals.

Despite the perception of collaboration which surrounds partnering, it also recognises self-interest; both companies need to benefit, otherwise it would not be pursued. Implications of partnering include dependency issues and whether companies should retain or outsource parts of the project. As larger projects are being delivered through more collaborative arrangements, in which companies partner to form a consortium, this may facilitate collusion. Factors identified overseas, that stimulate collusion, were found to align with the current state of the New Zealand construction industry. While such factors can promote collusive or anti-competitive behaviours, it was opined within the industry that such practices do not exist. The threat of such practices was considered more likely to stem from people not understanding the limitations or boundaries prescribed by law. Collusion was deterred primarily by procurement practices already adopted by the NZ Transport Agency and the damage a company's reputation would incur; to a lesser degree personal ethics, competitiveness and legislation were also considered to prevent collusion.

1 Background

The road transport network in New Zealand is made up of approximately 11,000 km of state highway and 80,000 km of local roads. New Zealand's road network can be considered a crucial piece of infrastructure, serving as the predominant means of domestic transport for both personal journeys and freight. Additionally, the network provides resilience in the form of lifelines in the event of an emergency, absorbing disturbances and allowing for growth in public and private capacities (Ministry of Transport, 2011). For these same reasons, it is necessary to maintain and upgrade the network, so its functionality remains intact.

This continually expanding and upgraded transportation network includes infrastructure such as roads, tunnels and bridges. Heavy and civil engineering accounts for approximately a quarter of total construction expenditure in New Zealand (Ministry of Business, Innovation and Employment, 2013). The construction sector was New Zealand's sixth-largest sector, contributing 6.3% of New Zealand's GDP in 2010. The size and geographical spread of the transportation network result in an industry in which there is a high demand for professional services (design, testing) and physical works (rehabilitation, repair, construction). This gives rise to a high-value industry in which many New Zealand companies compete and co-exist through collaborative partnering.

The New Zealand Transport Agency (NZ Transport Agency) is a relatively new government body. It was formed following the merge of Land Transport New Zealand and Transit New Zealand in 2008. As the sole transportation authority, the NZ Transport Agency is responsible for the management of the national land transport programme and thereby the associated funding of infrastructure throughout New Zealand. Since its formation in 2008, the NZ Transport Agency has funded, on average, \$1.0B per year towards replacements of bridges and other structures, minor improvements to assets, new roads and bridges, and road reconstructions (NZ Transport Agency, 2017a); this expenditure does not include contributions from local authorities towards projects. Since 2007 funding has increased 122% to almost \$1.8B in 2016 (NZ Transport Agency, 2017a). This has resulted in not only more, but also larger projects being undertaken. With increasing project value and size, companies are increasingly working with one another. However, as seen internationally the size and value of the construction industry has on occasions led to collusive practices between companies.

The construction and maintenance of roads and road-related infrastructure throughout New Zealand can be considered a significant sector. Thus, the civil engineering industry and projects specific to the NZ Transport Agency will form the subject of this research, with the focus being on how companies balance competitive and collaborative considerations.

1.1 Suppliers

To work on large projects for the NZ Transport Agency, contractors are required to be prequalified for physical works (NZ Transport Agency, 2014; NZ Transport Agency 2017b). A similar process is required for consultants. Contractor prequalification is split across four categories; routine and minor works, surfacing, bridge construction, and construction (NZ Transport Agency, 2017b). Each contractor is rated

from 'A' (highest) to 'D' (lowest) for each of the above services. Level A contractors are considered to have the highest degree of competency, offering improved environmental management capabilities, quality management and technical specialist application and understanding (NZ Transport Agency, 2017b). As such, these contractors are considered capable to deliver projects over \$5M in value. Of the 84 contractors on the NZ Transport Agency's prequalified list (as at 31 January 2017)¹, 8 contractors are rated 'A' for each of the four service categories.

Consultant prequalification is split across 17 fields of expertise. For each field of expertise consultants are approved up to a maximum project value (fee) of either 'Any' or <\$200k. The NZ Transport Agency's "The National Register of Consultants" (as at 17 May 2017)² had 207 consultants listed. Each consultant is assessed against the fields of expertise and across six geographical regions (i.e. a consultant approved in Auckland and Northland may not be approved for Otago and Southland); for clarity Table 1 provides an example extract. "The National Register of Consultants" (as at 17 May 2017) had only 7 consultants rated 'Any' for the majority of geographical regions and fields of expertise.

Table 1: Extract example of consultant prequalification classification levels

Name of Business	Region	Field of Expertise			
		Structural Design and Supervision	Geotech. Engineering	Tunnel Management	Environmental Management
Example Consultant	Auckland & Northland				
Example Consultant	Wellington, Nelson, Marlborough & Tasman	Any	Any		Any
Example Consultant	Taranaki, Gisborne, Wanganui & Manawatu	Any	Any		Any
Example Consultant	Auckland & Northland	Any	Any		Any
Example Consultant	Waikato & Bay of Plenty				<\$200K
Example Consultant	Canterbury & West Coast	Any	Any		Any

The number of companies on each prequalification register will vary; either increasing with the addition of new companies or decreasing through companies expanding through acquisitions. The registers evidence that there are few companies capable of delivering, or significantly contributing to, projects of large magnitudes across New Zealand. This emphasises the small nature of the New Zealand engineering industry and highlights the importance of understanding how companies balance competition.

The number of companies within the New Zealand construction industry draws parallels with comments made by Latham (1994) and Egan (1998) about the fragmented nature of the UK construction industry.

¹ Contractor prequalification sourced from: <https://www.nzta.govt.nz/resources/prequalified-contractors/>

² Consultant register sourced from: <https://www.nzta.govt.nz/resources/national-register-consultants/>

Egan (1998) concluded that the fragmentation of the construction industry inhibits performance improvement. His research identified that there were some 163,000 construction companies listed on the 'Department of the Environment, Transport and the Regions' statistical register. While New Zealand is a smaller industry, and the NZ Transport Agency's registry contains substantially fewer companies, considering the proportions of each country with respect to one another, Egan's sentiment is likely to hold true. Furthermore, Latham (1994) noted that a problem with the fragmented nature of the construction industry was companies cannot recognise benefits from investment in areas like research; particularly those related to construction processes and the integration of design and construction. Egan (1998) identified tools for tackling fragmentation, such as project management and partnering agreements, both of which have been increasingly adopted by companies and clients in place of traditional, contract-based procurement.

1.2 Supplier Selection

The supplier selection method used by the NZ Transport Agency vary based on the individual project's attributes. Smaller projects with a lower quantum of risk and a well-defined scope recognise that best value for money is achieved through lower costs. These projects have a higher (or complete) weighting on price and a higher focus on competition (NZ Transport Agency, 2014). At the other end of the spectrum, larger projects which have a high quantum of risk and less defined scope, seek value for money through quality.

For larger projects that require multiple companies to deliver, supplier selection models are usually geared towards a Price Quality Method (PQM) or are Quality Based (NZ Transport Agency, 2014). PQM generally has a quality weighting of 70% to 80% for professional services and 30% to 50% for physical works, with the remaining percentage weighted on cost (NZ Transport Agency, 2014). Professional services seek quality whereas cost is the governing factor for physical works. Quality Based selection grades the attributes of suppliers; there is no competition on price (NZ Transport Agency, 2014).

For larger projects, companies often work in partnerships. Partnering enables companies to combine resources and maximise their capabilities and capacity. However, partnering and the formation of consortia further reduces the number of companies that compete. Thus, the rationale behind selecting a partner, and for deciding what qualities are sought after, are important for companies looking to enter into collaborative arrangements.

1.3 Delivery Models

The delivery model often dictates a requirement to partner. Table 2 summarises NZ Transport Agency delivery models which require a consortium of suppliers and, therefore, will generally be more collaborative. For these delivery models, particularly alliances, partnering considerations extend to aspects such as trust, openness and a constructive mentality (Opus International Consultants, 2012). In agreement with this, the NZ Transport Agency (2014) notes that the attitude of personnel and their ability to help build a positive culture is of critical importance. Personnel must be prepared to work closely and collaboratively with their counterparts and develop strong relationships. However, with this

drive to promote collaboration, it could be reasoned that collusive behaviours might develop. As the delineation between companies and their associated personnel becomes more transparent, it is important to understand how the balance between competition and collaboration can be achieved without giving way to collusion.

Table 2: Collaborative delivery models - adapted from NZ Transport Agency (2014)

	Asset Improvement (Capital Projects)	Asset Management (Maintenance)
Design Construct	Design and Construct (D&C) Public Private Partnerships (PPP) Early Contractor Involvement (ECI)	Performance Specified Maintenance Contracts (PSMC) Hybrid Network Outcome Contract (NOC)
Shared Risk	Supplier Panels Competitive Alliance Pure Alliance	Supplier Panels (Principal Advisor) Pure Alliance

For Asset Improvement projects the NZ Transport Agency's delivery model selection is based on a number of factors. In Figure 1 these factors are shown graphically with the preferred delivery model. The area bounded in red indicates collaborative delivery models.

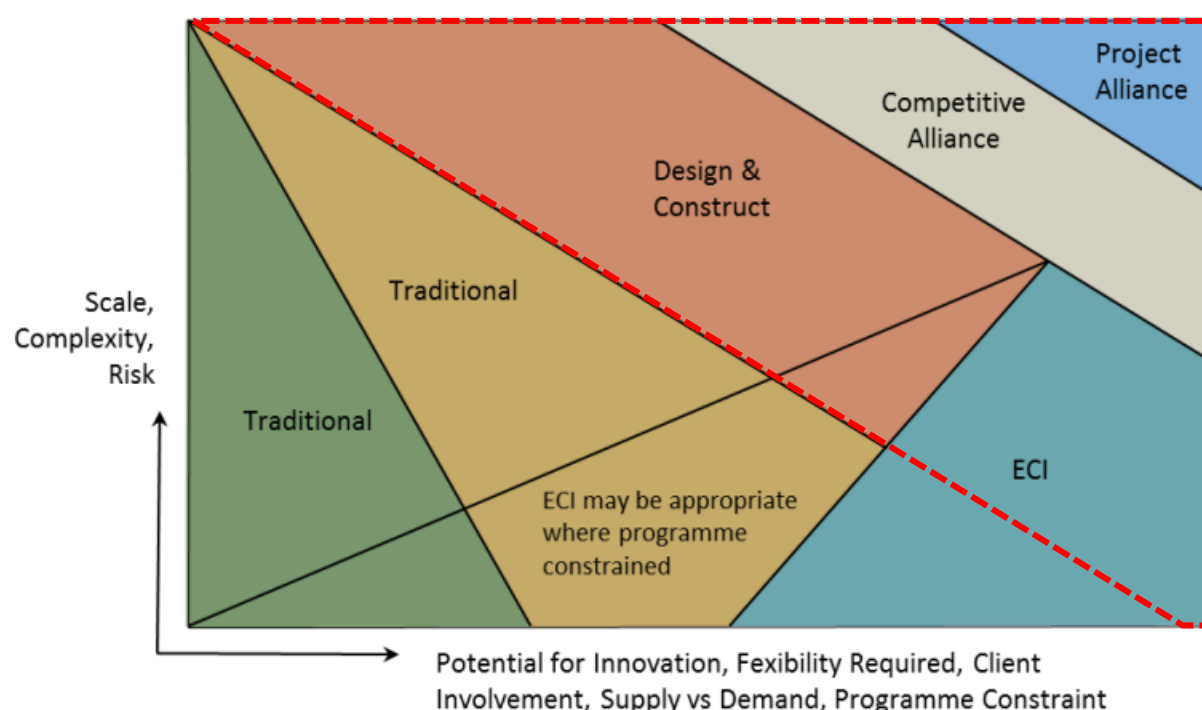


Figure 1: Delivery model selection graph – adapted from NZ Transport Agency (2014)

1.4 Scope / Problem Statement

New Zealand is a small country, in which few large companies readily compete across the engineering industry. Projects are becoming larger, increasingly more complex, and requiring different, often more specialised, skills. As a result, projects of increased magnitude tend to be geared towards collaborative delivery models such as NOC, D&C, ECI, Alliances or PPP. Evidently, only a small proportion of contractors and consultants have the required resources and/or capabilities to solely deliver such projects. Therefore, there is a shift towards collaborative arrangements and partnerships. The rationale for selecting partners, and the variability in partnering arrangements that ensues, is an important consideration as many smaller companies rely on partnerships or sub-contractor agreements for a large proportion of their work. Understanding the rationale companies consider when selecting partners could be a catalyst for shifting away from traditional and adversarial arrangements, while ensuring competition is sustained.

Therefore, the aim of this research is to identify how companies balance competitive and collaborative interactions without transgressing toward collusive behaviours.

1.5 Research Aim and Objectives

The problem statement and research aim will be explored using the following research objectives:

1. Quantify internal and/or external factors that influence partnerships (Chapter 4);
2. Describe qualities which companies look for in a partner (Chapter 5);
3. Uncover the rationale and implications of forming partnerships (Chapter 6);

2 Literature Review

It is commonly accepted across literature that the construction industry is synonymous with adverse relationships. Wilson, Songer and Diekmann (1995); Li, Cheng and Love (2000); Humphreys, Matthews and Kumaraswamy (2003); and Chan et al. (2004) all note that due to the fragmented nature of the construction industry there is an inherent lack of communication and co-operation among project stakeholders. Ng, Rose, Mak and Chen (2002) and Chan et al. (2004) noted that traditional construction projects have always been characterised by adversarial attitudes between the client and contractor, often resulting in loss of productivity, project delays, difficulties resolving claims and increases in cost and litigation. Furthermore, Ng et al. (2002) notes that the escalation of adversarial attitudes has been closely linked to the competitive nature of the construction industry, inducing an environment of conflicting objectives. Larson (1995) found that this decline in project performance is evidenced by an increasing reliance on litigation to resolve disputes, concern over the quality of the work and the erosion of profit margins. These aspects can further degrade relationships by reducing trust, respect, and honesty between clients, main contractors, consultants and sub-contractors (Humphreys et al., 2003).

Chan et al. (2004) identified that the adversarial relationship between clients and construction contractors is one of the major barriers to the success of the construction industry. Cowan, Gray and Larson (1992) noted that the tendency for both owner and contractor to assume an adversarial posture with each other centres on the inherent conflict between owners' costs and contractors' profits. Thus, when considered as mutually exclusive outcomes, one persons' gain is the other person's loss. Wilson et al. (1995) found that the adverse nature of the construction industry, and detrimental impact on projects, served as an impetus to pursue team-building or organisational-development methodologies, such as partnering. However, for partnering to become effective in the construction industry, relationships between the client, contractor and consultant must be reshaped so partners pursue common goals and priorities (Cook and Hancher, 1990).

Like trends in other industries, partnering has been introduced into the construction industry. In fact, it has even been described as *"the most significant development to date as a means of improving project performance"* (Wood and Ellis, 2004). Partnering represents a fundamental shift from the traditional adversarial relationships towards a more co-operative and caring environment (Ng et al., 2002). Similar views were previously noted by Larson (1995) who believed that partnering represents a paradigm shift in how projects involving multiple contracted parties are managed. Partnering is based on the realisation that traditional adversarial relationships between clients and contractors often regresses into an inefficient relationship (Cowan et al., 1992; and Humphreys et al., 2003). This impaired relationship status has prompted the need for a new approach to procurement. This need is compounded by the previous experiences of companies within the construction industry, which resulted in arbitration or litigation processes while attempting to overcome difficulties (Chan et al., 2004). Partnering is intended to reduce adversarialism which has impeded previous attempts to encourage integration and co-operation between contractual partners (Bresnen and Marshall, 2000). As noted by Walker, Hampson

and Peters (2002), partnering delivers an important shift in the way construction projects are carried out and shows positive outcomes in regard to better conflict management and more trusting relationships.

Partnering is not a new concept and is the subject of numerous accounts of research and literary publications. Much of this tends to concentrate on success stories, which are largely anecdotal and focus on the experiences of exemplar companies (Wood and Ellis, 2004) operating in foreign markets such as the USA, Australia, Hong Kong and the UK. Regarding partnering, different research approaches have captured a wide range of behaviours, attitudes, values, practice tools and techniques (Bresnen and Marshall, 2000). However, it is generally agreed that there is no unified understanding of the concept (Nystrom; Li et al. cited in Bygballe et al., 2010) and the definition of partnering varies across literature. The most consistent and seemingly accepted definition of partnering throughout literature is that of the Construction Industry Institute (CII, 1991), which defines partnering as:

“a long-term commitment between two or more organisations for the purpose of achieving specific business objectives by maximising the effectiveness of each participant’s resources. This requires changing traditional relationships to a shared culture without regard to organisational boundaries. The relationship is based on trust, dedication to common goals, and an understanding of each other’s individual expectations and values.”

Other sources of literature (Cook and Hancher, 1990; National Economic Development Council, 1991; Cowan et al., 1992; Harback, Basham and Buhts, 1994; Latham, 1994; Bennett and Jayes, 1998; and McGeorge and Zou, 2013) have generally adopted a similar definition of partnering as that of the CII. While their definitions vary, as each author has placed a greater emphasis on various aspects, the main themes that commonly underlie partnering were found to comprise:

- Contractual arrangement between two or more parties.
- Long-term commitment, not limited to a single project.
- Promoting co-operation between parties, and co-operative decision making.
- Mutual objectives or shared vision.
- Resolution of disputes in a timely and effective manner.
- Trust.
- Feedback to continuously improve performance.
- Maximise effectiveness of participants resources.

Similar to the above, the NZ Transport Agency’s Project Management Manual (NZ Transport Agency, 2010) states that partnering aims to “foster an atmosphere of understanding and co-operation between the NZ Transport Agency and its suppliers and stakeholders” and “establish effective working

relationships through a mutually developed strategy of commitment, co-operation and communication with the goal of improving quality, productivity and stakeholder value by minimising disputes". Key aspects to note are that the value to be gained from partnering increases with project complexity, value and risk (NZ Transport Agency, 2010). Regardless of pressures, partnering requires continual commitment from all parties to ensure co-operation throughout the project. This is achieved by creating a team-based environment amongst all levels of participants (NZ Transport Agency, 2010). The NZ Transport Agency (2010) also state that "while partnering is intended to develop effective working relationships, it is not intended to dilute the contractual or legal relationships between the parties". Experience has shown partnering can reduce the need to resort to litigation to resolve disputes, which is one of the main objectives of partnering (Harback et al., 1994; Larson, 1995; McGeorge and Zou, 2013).

Crowley and Karim (1995) stated that partnering is typically defined in one of two ways: (1) by its attributes such as trust, shared vision and long-term commitment; or (2) by the process where partnering is seen as developing a mission statement, agreeing on goals, and organising / conducting partnering workshops. For this research, the term 'partnering' will be considered as the act of two or more companies (namely contractors and consultants) who opt to work together across singular or multiple projects; even if forced by contractual requirements. While this definition of partnering departs from common literary definitions, the decision to partner will still be founded on underlying themes of being a relationship between two or more companies, centred around trust, co-operation, long term commitment, shared vision, etc.

Literature has tended to focus on the client-contractor relationship when exploring themes of partnering. While this research is set to examine the partnering balance between contractor-consultant relationships, the previous research still holds value for identifying key points and ultimately deriving a basis for knowledge on partnering. This research seeks to better understand the rationale behind companies and how partnerships are initiated and maintained. It will also investigate whether the same level of adversarialism is present between companies (contractor-consultant or contractor-contractor) as is apparent between companies and clients.

While the definition for partnering varies across literature, there is increased agreement regarding two common subsets of partnering, which literature commonly defines as project partnering and strategic partnering (Bygballe et al., 2010; McGeorge and Zou, 2012; Humphreys et al., 2003; Li et al., 2000). Project partnering occurs when two or more companies come together in a partnering arrangement for a single project. Strategic partnering takes place when two or more companies use partnering on a long-term basis to undertake more than one project (McGeorge and Zou, 2013). Project partnering is considered by some researchers to be the first step towards the more mature form of long-term strategic partnering (Kubal, Thompson and Sanders; Cheng et al., cited in Bygballe et al., 2010). Thus, regarding the context of New Zealand engineering companies, variability in project partnering relationships could be an indication of early stages of partnering and given more time strategic partnerships could begin to develop as the industry matures. Bygballe et al. (2010) wrote that strategic partnering occurs where the

partnering team is able to enter into a series of projects, and as with project partnering, can operate within conventional procurement agreements. Regardless of the form (or length) of the partnering arrangement McGeorge and Zou (2013) note that for any partnership to work, the partners must bring complementary skills. There is no point in the partners bringing the same or similar strengths.

McGeorge and Zou (2013) stated that because partnering aligns with long-term relationships, strategic partnering is more likely to recognise benefits than short-term project arrangements. However, Bygballe et al. (2010) found that in both practice and literature there is an increased focus on project partnering, even if strategic partnering is often seen as the goal. The short-term focus evident in the construction industry is further heightened by clients' changing suppliers between projects. Eriksson, Nilsson and Atkin (2008) stated that changing suppliers has a negative effect on relationships because expectations of future work is thought to serve as a stronger motivator for partnering than financial incentives.

Bygballe et al. (2010) noted that as relationships evolve over time, it necessitates a strategic approach to partnering rather than a project orientated one. Furthermore, Bygballe et al. (2010) reason that the emphasis on formal mechanisms to facilitate relationships could stem from literatures focusing on project partnering. Bresnen and Marshall (2000) argue that partnering should be the result of organic evolution between companies with long-term relationships, who have begun to trust one another through their working relationship. Thus, the development of trust between companies can be considered a function of relationships length, and the mechanisms that led to this alignment; repetition, routine, understanding (Bresnen and Marshall, 2000)

Bygballe et al. (2010) observed that companies will be involved in numerous projects and relationships simultaneously. Therefore, a common objective in any partnership should be to not only achieve improved project performance but also for all companies involved to recognise benefits. As partnerships will vary with time, it necessitates their continuous evaluation (Bygballe et al. 2010). Bresnen and Marshall (2000) make the argument that the continuous evaluation of partnerships may result in a departure from the collaborative ideal. It is possible there may be an unwillingness to commit to long-term relationships, because they stop companies from taking advantage of favourable deals from alternative suppliers and price competition (Bresnen and Marshall, 2000). However, research has not explicitly focused on the incipient stages of partnerships or how partnerships are initially developed.

Osarenkhoe (2010) wrote that for the transition to strategic partnering, due to relationships requiring commitment of companies, there needs to be a willingness to contribute to the co-operative relationship. During this time, companies could be expected to sacrifice short-term benefits to achieve long-term gains. Bresnen and Marshall (2000) agree that, in the short-term, companies may be willing to absorb extra costs to develop or maintain a relationship. However, Bresnen and Marshall (2000) go on to state that such an approach may be unsustainable if compensation from the relationship is not forthcoming. Additionally, if clients use collaboration as a means of increasing performance targets (e.g. continuous improvement programmes) profits may only be achievable if companies revert to adversarial behaviour. Thus, partnering could become a victim of its own success Bresnen and Marshall (2000).

Cook and Hancher (1990) concluded that to expand partnering relationships in the construction industry, a 'partnering process' should be developed. They noted that this process should include the development of guidelines for establishing and maintaining a partnering relationship. Thus, the partnering process was defined by five sequential steps: (1) recognition of partnering opportunities; (2) strategy development; (3) partner selection; (4) contract negotiations; and (5) implementation. With respect to the proposed steps in their research, each has been expanded on to incorporate views, findings and themes published in subsequent years. This will allow a holistic understanding of partnerships, from their early stages through to implementation. The compilation of literature will also serve to identify gaps present in current theory; which will look to be addressed herein.

2.1 Recognition of Partnering Opportunities

Prior to partnering, companies need to firstly consider if partnering for a project is viable. Wilson et al. (1995) note that some projects offer better opportunities to partner than others and, therefore, should be targeted for partnering to ease the transition. Harback et al. (1994) and Wilson et al. (1995) identified the following factors when determining the level of involvement for a specific project.

- Project size *small – large*
- Project complexity *simple, common – complex, unique*
- Relations *no relationship – matured long-term relationship*
- Location *easily accessible – isolated*
- Political sensitivity *insensitive – sensitive*
- Criticality for follow-on projects. *one off – opportunity for future work*
- Market and financial analysis *Unsuited conditions – favourable conditions*
- Internal and external risk analysis *low consequence – high consequence*

One of the first aspects regarding the recognition of partnering opportunities is to determine whether partnering is appropriate. McGeorge and Zou (2013) found that, depending on the situation, partnering is not always the best approach for some companies. Ideally, there should be a compatible relationship between the companies with each bringing complementary strengths. The worst-case scenario is when an inherent weakness in one company spreads through the team; in this situation, partnering is likely to exacerbate problems (McGeorge and Zou, 2013).

Assuming then the decision to partner is taken, how is the process of selection initiated? McGeorge and Zou (2013) stated that there is no clear answer to this question. The partnering connections must be made by the individual companies, albeit at times forced by the NZ Transport Agency and contractual arrangements. Partnering is aimed at altering the culture associated with the construction process and, therefore, attention to the individuals, the projects, and the companies involved is required (Wilson et

al., 1995). Much of the current research has already looked closely at project partnering, thus, this research will examine the individuals which make decisions to partner on behalf of their companies.

2.2 Strategy Development

Why do some companies form partnerships while others do not? A theme from literature, which emphasises the strategic aspects of co-operation seems relevant to this question. The central premise is that people engage in co-operation because of appropriate payoff structures (Eisenhardt and Schoonhoven, 1996). That is, people co-operate when the payoff for co-operation exceeds that of proceeding alone. When the payoff shifts to favour solo endeavours, people will disengage from co-operative activities. Thus, this perspective reflects the views of individuals, emphasising the nature of the payoff structure and the role of self-interest in co-operation (Eisenhardt and Schoonhoven, 1996).

Some scholars argue that co-operation is beginning to replace competition and inter-company confrontation. Lorange and Ross' 1993 study (cited in Clarke-Hill, Li and Davies, 2003) proposed that there may be genuine desire for mature, long-term strategic partnerships; an emphasis on lasting relationship where benefits and costs may fluctuate over the short-term but even out with time. Conversely, other authors emphasise the presence of both competition and co-operation. Co-operation can exist alongside competition but not without tensions (Clarke-Hill et al., 2003)

If partnering for a project is not stipulated by the project arrangement but left to the discretion of the perspective companies, there is a greater consideration of whether to partner or not. In such instances, a high payoff for co-operation is particularly likely when companies are in vulnerable strategic positions; this occurs when companies are in difficult market situations or are undertaking expensive or risky strategies (Eisenhardt and Schoonhoven, 1996). To improve strategic position, partnering can provide critical resources both tangible in nature (e.g. specific skills and financial resources) and/or intangible such as reputation and market power (Eisenhardt and Schoonhoven, 1996). Companies in highly competitive markets have vulnerable strategic positions because margins are low and product differentiation is difficult. Resources acquired by companies through partnering can enable them to share costs or to gain differentiable resources or services which outweigh the disadvantages of the formation. Furthermore, Li et al. (2000) suggested that partnering can be used to distribute risk between parties, resulting in reduced exposure of each entity. Conversely, if the market is not competitive or the company is pursuing a strategy for which it has extensive resource capabilities, there is much less incentive to co-operate, and companies are more likely to work alone.

The variability in New Zealand partnering relationships aligns with research by Eisenhardt and Schoonhoven (1996) and Cheng, Li and Love (2000), where companies must balance their competitive and co-operative behaviour depending on the circumstances. Regardless of how the partnering arrangement are decided (e.g. contractually or at a company's discretion), companies will become embedded in a network of collaborative relationships. This, concurs with Hunt and Gnyawali (cited in Clarke-Hill et al., 2003), who suggest that a company's position in such networks is important. A company with a superior network position is likely to learn about prospects sooner and use the

knowledge in planning and implementing competitive actions. Variability in partnerships could therefore be a way of obtaining network centrality and could be the strategic objective as opposed to symptoms of an undecided, or progressive industry.

For long-term partnering arrangement, as noted by Cook and Hancher (1990), partnering can be used to facilitate a company's expansion by reducing both the time and cost to gain access to products or resources. Thus, considering a company's means of expansion, growth tends to follow a standard route through four stages (Chandler, cited in Cook and Hancher, 1990). These four stages follow:

- | | |
|----------------------------|---|
| 1. volume expansion | <i>the company grows by selling more of its product or service to existing clients</i> |
| 2. geographic expansion | <i>the company grows by selling the same product or service, but in a larger geographic area through regional offices</i> |
| 3. vertical integration | <i>the company grows by either buying or creating other services, production or distribution functions</i> |
| 4. product diversification | <i>the company grows by expanding the line of services offered.</i> |

While partnering has been seen to facilitate expansion, it has also evolved as an innovative approach for the procurement of services in the construction industry (Chan et al., 2004). Partnering lowers the risk of delays and cost overruns because of better time and financial control over the project (Bresnen and Marshall, 2000; Wilson et al., 1995; Latham, 1995). Partnering also increases the opportunity for innovation, in particular with the early involvement of contractors. This allows the development of value engineering, incorporation of changes and improvement to constructability because of open communications and existence of trust amongst project parties (Bresnen and Marshall, 2000; Chan et al., 2004). Long-term partnering also offers the potential advantage of greater stability in workload, as companies deploy their resources more effectively it allows them more freedom to invest in training and research (Bresnen and Marshall, 2000).

While partnering is said to be built on trust, win-win attitudes, etc. it does not mean that partnerships are not used for competitive purposes. Osarenkhoe (2010) notes that competition occurs when several companies in a market struggle for scarce resources, and/or produce similar products or services for the same clients. The validity of this definition can be seen by looking at the number of both consultancy and contracting companies in the New Zealand engineering industry. Furthermore, there is an implicit view that some companies may be more apt at competing than others. Thus, differing levels of competitiveness could result in variable growth rates among companies within an industry. With time, competitive behaviour could lead to monopolistic positions of certain companies, instead of a state of perfect competition (Osarenkhoe, 2010).

Osarenkhoe (2010) notes that for companies looking at different strategies to remain competitive, collaboration is an alternative. Collaboration is defined as working together for a common interest or

voluntary co-operation between companies involving the exchange and sharing of resources or services. Expanding on a similar idea, Clarke-Hill et al. (2003) observed that co-operation between companies can permit the pooling of their complementary strengths. Thus, co-operation is fortified by the coexistence of market commonality and resource asymmetry between competitors. Market commonality contributes to competition between companies providing the same service, whereas resource asymmetry contributes to co-operation and the amalgamation of resources (Osarenkhoe, 2010). This aligns with Cook and Hancher (1990), in that companies must seek new strategies to lower costs and differentiate themselves in order to gain competitive advantage. The ideal relationship is one which is unique, such that a client benefits from a company's service, while the company engages in a relationship that other competitors would have difficulty duplicating. The idea of the relationship is to replace adversarial views with trust and commitment; allowing problems to be solved together and reducing costs (Cook and Hancher, 1990). While a mutually beneficial relationship could occur between any two parties, it is examined in the context of consultant-contractor in this research.

Companies who combine resources in unique ways may develop an advantage over competing companies who are unable or unwilling to do so (Dyer and Singh, 1998). Furthermore, Dyer and Singh (1998) note that there are strong first mover advantages for companies that can quickly identify and partner with others possessing complementary resources and/or a relational capability. Therefore, in line with Clarke-Hill et al. (2003), offensive partnerships are intended to develop a company's competitive advantage and strengthen their position by diminishing other competitors' market share. Converse to offensive partnerships, Clarke-Hill et al. (2003) also noted that companies form defensive partnerships by constructing entry barriers that are intended to secure their position and stabilise their standing in the industry. Alternatively, companies that have a weak position in the market may form defensive partnerships to defend themselves against dominant players (Clarke-Hill et al., 2003).

The divide between deciding to partner and successfully forming a partnership is further complicated by the number of competitors within the industry vying for the same project and the same sets of resources. Partnering is not an isolated event, and when stipulated by contractual arrangements, all interested companies look to formalise relationships simultaneously. However, the choice of partnering is not binary, and considerations for subsequent partners, should the initial choice not succeed, may be required. Research has not previously considered the complexity of partnering arrangements for project partnering. This research will look to further understand how an initial partner is identified and the considerations for forming either defensive partnerships, by strengthening capabilities and skills, or offensive partnerships by strengthening their position through reducing a competitor's ability to partner.

External factors can also influence the decision to partner. Li et al. (2000) listed the predominant external factors affecting the construction industry as:

- Dwindling resources.
- Market/economic conditions.

- Enhanced legal concerns.
- Accelerated development and emergence of technology.
- Increasing competition and higher standards for competitive success
- The need for more flexibility and faster response time.
- The increased risk in construction.

All the above factors ultimately lead to changes within the engineering industries economic conditions. Economic conditions will influence the partnering process and will be related to the way contracts are pursued. As such, partnering is likely to depend upon prevailing market conditions. These conditions can either encourage parties to work together towards a common purpose or shift to cause a more negative orientation towards partnering. For example, Bresnen & Marshall (2010) considered that in a buyers' market clients may be able to shift risks onto the contractor and/or consultancies. Thus, as noted by Khalfan, McDermott and Swan (2007) under these conditions, price competition may intensify and result in contractual arrangements that place companies under pressure to recover profit. This is exacerbated if a company is struggling financially and untrustworthy behaviour may arise to ensure their survive. Thus, financial stability is likely to be correlated with the level of trust companies have for one another, which infers economic decisions govern much of a company's rationale.

McGeorge and Zou (2013) believe that the trend towards partnering is predicted to increase as more and more companies realise they cannot operate by themselves if they want to compete and be successful. In line with this, Clarke-Hill et al. (2003) emphasised that the strategic issue is not choosing between co-operation and competition but managing the tension between the two. They noted that, co-operative strategy, while valuable, cannot substitute competitive strategy. Cook and Hancher's (1990) noted that it is important that companies consider the following principles when developing a strategy that includes partnering:

1. Consider the rationale of partnering versus going it alone.
2. Weigh the short- and long-term benefits of a partnering relationship.
3. Undertake a feasibility study of the market, the competition and costs.
4. Identify major strategic issues, challenges, and risks.
5. Review how partnering fits with the company's corporate strategy.
6. include senior management in the planning stages.
7. Develop a resource strategy for personnel.

While this section has provided insight into strategy development and some of the considerations faced by companies looking to partner, it is evident that literature has not closely examined the complexities associated with the initiation of partnering. While being an area that undoubtedly has commercially sensitive aspects, there is a lot to be gained from fully understanding the process behind partnering as opposed to solely reiterating its advantages. Thus, this research will look to gather expert opinions around the rationale employed when looking to partner.

2.3 Partner Selection

Providing that the opportunity to partner exists and a partnering strategy has been developed, partner selection includes analysing a partner's capability and personnel, and preparing appropriate selection criteria. Cook and Hancher (1990) note that taking the time to identify a partner is important to the processes success, and that companies must make time to develop relationships and feel comfortable with each other. Khalfan et al. (2007) found that trust is not an isolated incident; trust is built up over the course of a project, or many projects. This notion aligns with that of Bresnen and Marshall (2000), that the development of trust between companies is seen as a function of the length of the relationship between them. In addition to the company's previous undertakings, Cook and Hancher (1990) identified that to partner, each company must have complementary resources or services, must share a co-operative business philosophy, have a good reputation, and be financially and organisationally stable.

The ability of a company to identify and evaluate partners depends on the extent to which the company has access to information (Dyer and Singh, 1998). This builds on previous comments regarding the view of Clarke-Hill et al. (2003) that depending on the extent in which a company occupies a position within an industry network, they will be able to more readily identify and partner with other companies. Thus, the variability of project partnering allows for these relationships to be created and maintained going forward. It is important to note that occupying a position within an industry network implies that companies have previously partnered and developed relationships. McGeorge and Zou (2012) found that if companies have previously been involved in similar partnering arrangements, many of the processes and relationships will have already been developed, whereas first-time occasions will require companies to carefully consider such processes.

Dyer and Singh (1998) stated that relationships are often dependent on a company's ability to find a partner with complementary resources and a relational capability. Companies slow to embrace partnering may find that potential partners with complementary resources have already entered into agreements with others. This is a problem for entrants into foreign markets, where there may be few local companies with industry knowledge, contacts, and networks needed to facilitate market entry. In other instances, potential partners may simply lack the relational capability or skills to employ effective governance or develop knowledge-sharing processes (Dyer and Singh, 1998). Thus, from the perspectives of McGeorge and Zou (2012), and Dyer and Singh (1998), companies which have previously partnered could be considered to have an advantage when it comes to forming future partnerships over those which have not. Furthermore, due to the relatively small size of the engineering

industry in New Zealand, relationships between dominant companies may create barriers of entry to the market for both domestic or international companies.

Literature extensively notes that partnerships are founded on trust. Though how this trust is initially developed has not been clearly addressed. Research by Khalfan et al. (2007) into building trust found that most individuals stated that they tended to trust people rather than companies. However, the role of a company's reputation was still considered important. Through interviews they found that the construction sector is considered a small industry, where people constantly worked with the same people over many years. Furthermore, the work of Khalfan et al. (2007) considered that people build relationships by working together. This prompts the thought that personal relationships may be more influential on company's relationships that research has previously considered, if at all considered. Khalfan et al. (2007) hypothesised that two influential factors affecting the development of trust were the project size and the level of project complexity.

For smaller projects Khalfan et al. (2007) observed that due to their shorter duration, there is a limited time for which people can build trust. However, smaller projects have less people, allowing for direct communication with a greater percentage of the project team and enabling relationships to be managed more easily. Khalfan et al. (2007) noted that due to the lower value associated with smaller projects and the impact of decisions having less financial risk, it leads to greater levels of trust. Conversely, larger projects have more people involved, which may limit opportunities for working with some partners, but they offer more time and scope for developing long lasting relationships. As larger projects generally have a higher value, the risk and cost associated with the decision to trust can be higher; this can impact the willingness to trust. Similarly, the greater the level of complexity in a project, the greater the need for trust (Khalfan et al., 2007). A complex project may contain many specialist activities that all parties may not be competent in. Therefore, the other parties rely on the communications and actions of these specialist contractors and/or consultants to complete their portions of the project.

According to the CII task force, trust encourages open communication, helps develop confidence in one another, and allows the exchange of ideas and sharing of resources (Crowley and Karim, 1995). However, trust can be considered a complex issue and many factors influence trust in a relationship. Khalfan et al. (2007) identified three main factors which underpin trust; reliance, delivery of outcomes and honest communication. In short, standing by promises, providing reliable information, and executing work which matches or exceeds people's expectations creates trust. While trust is mentioned across literature as being necessary for partnering, it is not the sole requirement; other qualities are also essential for partnering. A comparison of the qualities noted in literature has identified the most frequently mentioned and is summarised in Table 3. Traits of a similar theme were collated as to avoid repetition of wording variants (i.e. shared vision, compatible goals and mutual objectives).

Table 3: Frequency of qualities identified across literature

Number of References	Qualities
11	Trust
9	Commitment (long term)
7	Communication
7	Management (skills / support)
7	Shared vision / goals / objectives
7	Win-win attitude
6	Conflict resolution
6	Co-operation
5	Equity
5	Innovation
5	Risk (sharing / management)
4	Financial position
4	Past performance (track record)
3	Capability
3	Company systems (financial, H&S, environmental, quality, etc)
3	Litigation history (previous disputes)
3	Monitoring/evaluation of partnering process
3	Problem solving
3	Reputation
3	Resources (adequate, complementary, willingness to share)
3	Safety history
3	Teamwork
3	Understanding
2	Integrity / Respect
2	Honesty
2	Openness
2	Ethics
2	Leadership
2	Coordination
2	Equality / Fair
2	Partnering Experience
1	Personal Relationships
1	Availability
1	Market Entrance Opportunity
1	Learning Opportunity
1	Company Size

Referenced papers: Crowley and Karim (1995); Eisenhart (1996); CII (1996); Cheng et al. (2000); Li et al. (2000); Walker et al. (2002); Ng et al. (2002); Humphreys et al. (2003); Chan et al. (2004); Wood and Ellis (2005); McGeorge and Zou (2013); and NZ Transport Agency (2015).

The qualities identified in Table 3 are in line with previous research. The CII report “In Search” (as cited in Crowley and Karim, 1995) summarises the attributes of trust, long term commitment, and shared vision are prerequisites for partnering. This is substantiated by Barlow and Cohen’s (as cited in Bresnen & Marshall, 2000) review of approaches to partnering, they note that mutual objectives, trust and understanding of each other’s commitments appear in most formulations. Some qualities were not commonly recognised across literature. For example, qualities found to only be mentioned on a singular occasion consisted of company size, personal relationships and market entrance opportunity. Other notable qualities which were only mentioned twice comprised ethics, partnering experience and leadership. While these qualities were considered to fall outside of the level of agreement across literature, it is believed that they still pose significant value, when looking to select a partner and should be given more consideration.

With the identification of preferential network positions and favoured qualities for partnering in mind, companies looking to identify a project or strategic partner can look to the research of Cook and Hancher (1990) and Wilson et al. (1995), which provides guidance on the process for assessing partners:

1. Initiate discussions with potential partners.
2. Pursue quality companies with experience.
3. Concentrate on complementary, horizontal partnerships.
4. Build relationships across all management levels.
5. Analyse potential partner's key resource contributions and gaps.
6. Conduct a detailed analysis of potential partner's strengths and weaknesses.
7. Analyse potential partner's management styles, organisations, and cultural differences.
8. Identify technological barriers and multipliers.
9. Carry out shared-vision and goal-development sessions.
10. Conduct an internal organisational structure analysis.

This section of the literature review has identified an avenue which appears to have gone largely unnoticed. Personal relationships, while not a quality possessed by the company directly, are hypothesised to have a greater influence on partner selection than literature has previously considered. Behind all decisions to partner will be an individual or group of individuals governing the decision. Thus, the personal element will incorporate some subjectivity and personal opinion and/or preference. The qualities considered in a partner are potentially reflecting that of an individual rather than a company as previous transactions with inter-company personnel will have shaped these views. Thus, is it the personal connection that allow people (representatives of the company) to differentiate between companies which offer similar services.

Literature has identified trust as the most prominent requirement for partnering relationships. However, trust is a behavioural aspect which will vary from person to person based on previous experiences and, therefore, is subjective in nature. These previous experiences are what leads to trust being developed. Trust is, therefore, the product of other qualities, for which literature has not previously captured as to derive sufficient understanding. As part of this research, the qualities identified in Table 3 were shared and discussed with industry experts to see if practice within the industry matches that of academic views. Experts were given the chance to add or remove qualities; identify qualities which, based on their opinion, are the resultant of others; and rank qualities from most important to least.

2.4 Contractual Negotiations

The main points arising from literature around contractual negotiations is whether partnerships should be developed around a project charter, or a contractual arrangement. In some cases, as observed by McGeorge and Zou (2012), the readiness to use partnering will be a condition of prequalification for tenders. Enforcing partnering does seem to go against the spirit of the concept, but provided that companies may still select who they partner with will still facilitate a collaborative culture.

Dyer & Singh (1998) found that the length of a partnering agreement (i.e. years) is one of the most influential factors for relationships. For the duration of the agreement companies are safeguarded against opportunistic behaviour, or others acting out of self-interest, as both want to preserve the relationship. Therefore, companies will be more inclined to embrace a co-operative mentality. However, relationships may depreciate over the contracts duration, as the necessity of a working relationship becomes less values toward the end of the agreement. Similarly, Wood & Ellis (2005) noted that while attitudes toward partnering are initially high, as the project progresses this early optimism often diminishes. Depreciation of the co-operative mentality can also arise from a company's resistance to being locked into a long-term dependence on another company (Bresnen and Marshall, 2000).

For trust to be built, all companies involved need to feel they are fairly compensated for their input into the project. If profits are equitable, or protected, then companies may not feel the need to extract more profit through variations (Khalfan et al., 2007). This aligns with the findings of Dyer and Singh (1998) who note that relationship must create appropriate incentives; equity arrangements were found to be particularly effective at aligning partners. Similarly, risk and reward provisions encourage co-operative behaviour between partners, including the client. Walker et al. (2002) stressed that measurements relating to project success rather than individual partner performance provided a strong incentive for partners to collaborate.

Harback et al. (1994) argue that one side of the partnership cannot be overloaded, the principals of equity and equality must be maintained. However, Humphreys et al. (2003) noted that in practice most relationships are still dominated by the relative and perceived power of the participants. In agreement with this, Osarenkhoe (2010) found that resource dependence will lead to an imbalance in the relationship. In such instances, one of the partners plays a dominant role in relation to a smaller partner in the relationship. Another such imbalance can arise from the client's dominant position within the project team. Wood and Ellis (2004) found that parties did not feel that contractual arrangements with

the client are often fair or equal. Clients are described as consistently having their own contractual terms which enables them to transfer the majority of risk to the contractor.

With several prominent contractors and consultants operating within the same industry, it is likely that dominant relationships will be in effect. These relationships are anticipated to exist between either larger contractors and smaller contractors, or the contractor and the consultant. The dominant behaviour of the contractor in the contractor-consultant relationship is hypothesised to stem from the substantially greater value of the physical works than that of the design input. However, the requirement for consultancy services, otherwise unobtainable by the contractor, provides a necessity for co-operation. The same cannot be said for contractor-contractor relationships where each party possesses similar capabilities, unless specialist skill sets are required. Thus, each scenario echoes the views around resource asymmetry expressed by Eisenhardt and Schoonhoven (1996) and Osarenkhoe (2010).

Wilson et al. (1995) and Li et al. (2000) both touch on the theme that, public sector partnering can only be promoted at a project level due to competitive tendering policies. Eriksson et al. (2008) make the point that the emphasis on public procurement, lowest price tendering is not given in law; best value (for money) is the criterion that allows other parameters to be evaluated, as referenced throughout the NZ Transport Agency's State Highway Procurement Strategy (NZ Transport Agency, 2014). Crowley and Karim (1995) stated that the major partnering participants within the construction industry (i.e. the client, consultant and contractor) have common project objectives. However, current and project management and procurement practices, especially lowest price tenders, put these parties in adversarial situations, which do little to promote the objectives. In line with this, Ng et al. (2002) feel that partnering is yet to return tangible benefits to the contractor/consultant because clients still have an ingrained, cost-driven agenda; by expecting to reduce costs, or pass risks down the supply chain, a genuine win-win attitude is not adopted.

For the contract negotiations stage of the partnering process, it is evident that partnering arrangements are sensitive to the length of the contract. There are arguments in literature both for and against short-term and long-term relationships, which leads to ambiguity surrounding the optimal contract duration. The length of an agreement is an influential factor regarding participants behavioural tendencies; and how these behavioural tendencies change with time has not been thoroughly considered.

2.5 Implementation

Cook and Hancher (1990) note that unless the dynamics and motives involved in partnering are understood, effective partnerships will not transpire. Considering strategic partnering arrangements based on long-term co-operation, previous experiences between companies are likely to have been positive during project partnering (Bygballe et al., 2010). Similarly, Love et al. (as cited in Bygballe et al., 2010) note that a long-term focus is needed to facilitate learning. Short-term relationships imply individual motivation and goals, which may hinder the development of common objectives, trust and the overall commitment to the relationship. Cook and Hancher (1990) note that the partnering agreements allow each company the opportunity to learn from the other. This sharing gives companies a competitive advantage, as each company can obtain benefits that would have exceeded their individual capability.

While Clarke-Hill et al. (2003) agree that learning from partners is important, it also provides companies an opportunity to observe their partners' capabilities. Furthermore, collaborative partnerships provide a way of getting close to competitors, enabling companies to predict how they will behave when the partnership finishes and, thus, increase their chances of success when competing for future projects (Clarke-Hill et al., 2003). This is in line with the research of Osarenkhoe (2010) who found co-operative agreements between companies could hamper a company's individual operations by enabling competitors to first monitor, and then to imitate core competencies and tactics. Thus, variability could be a means of ensuring no one particular partner is exposed to the company's operations for a prolonged period of time, limiting their opportunities for learning.

Some managers may find the ideals of partnering threatening, as they go against traditional business relations. Cook and Hancher (1990) believe that managers' attitudes toward partnering have been influenced by their company's corporate culture. In turn, this culture is governed by the environment in which the company operates and the services it provides, the company's competitors and clients, and the technologies available to the company. Bresnen and Marshall (2000) state that the attitudes and behaviours evident in the construction industry are deep-rooted and that it is difficult to shift away from such an embedded culture. Bennet (as cited in Crowley and Karim, 1995) found that communication could be improved between companies by pairing team members that had previously worked together. The experience from working together was found to increase communication efficiencies as it was easier for each person to judge the viability of a message or information. Thus, partnering benefits from ongoing relationships, where over time efficiencies in communication can be recognised. Thus, arises the potential for individuals, who may have previously worked together, on the grounds of their relationship to aid the transition of partnering. If the individuals are in positions with input into partnering opportunities, it is possible that these personal relationships could be one of the factors considered in deciding which company to partner with. The reoccurring notion of personal relationships appears to be an underlying theme present throughout. Previous literature has not explored this avenue or the behavioural aspects of individuals with respect to partnering.

2.6 Breakdown of Partnerships

The literature review has focused on the partnering process, from the recognition of partnering opportunities to the implementation of partnerships. The literature examined has predominantly reported on successful partnering outcomes and the benefits of partnering. However, to holistically understand partnering, aspects which deter its implementation (i.e. barriers, procurement practices, etc.) and reasons which existing relationships breakdown is also required. Understanding these aspects will help assist with ensuring that companies looking to partner will benefit from the experience. Cook and Hancher (1990) and Eriksson et al. (2008) both consider that there are three main barriers to partnering. The first two barriers, cultural and organisational, are agreed on by both sets of researchers but for the third barrier their views differ between industrial and time related.

Cultural barriers are those surrounding people and companies, and their attitudes to change. As noted previously, the most commonly observed cultural barrier is the level of adversity present within the

construction sector (Bresnen and Marshall, 2000). Seeing construction is a project-based industry, in which time and scope are finite, relationships tend to concentrate on short-term perspectives. Thus, Cox and Thompson, (as cited in Eriksson et al., 2008) concluded opportunism would arise as companies attempt to leverage what they can out of the existing contract. Additionally, Cook and Hancher (1990) noted that managers are often uncomfortable with the idea of partnering relationships because they are unwilling to relinquish control or share confidential information. As companies have predominantly worked in competition with one another, cultures are also characterised by conservatism and inflexibility to partnering (Ng et al., 2002). The will and ability to adapt to varying circumstances is an important aspect of joint problem solving. Another cultural barrier observed is the lack of a learning culture, such that existing values and beliefs are not open for questioning (Eriksson et al., 2008). Such attitudes can systemically lead to further cultural barriers such as the common exclusion of key sub-contractors, which signifies low levels of commitment to them as a project partner (Akintoye et al. as cited in Eriksson et al., 2008).

Organisational barriers involve resources, processes and routines. Eriksson et al. (2008) perceive the traditional procurement model as one of the predominant organisational barriers. This situation, derived from clients' competitive tendering habits, generally divides the project into separate work packages for different specialists to complete individually, therefore, impeding the integration individuals and/or companies. Another common barrier is a lack of competence. Ng et al. (2002) report that relationships become strained if companies have low confidence in their partner or the client's ability to manage the project: managerial and technical competences are both important. Similarly, Cook and Hancher (1990) described that barriers arising from the traditional client-contractor-consultant relationships are: (1) a lack of commitment to the partnership; (2) the priorities and goals of the client are substantially different to the contractor; and (3) clients frequently change the contractors/consultants they work with.

Industrial barriers are centred around competitive pressures and government regulations that are derived from a company's environment. Specifically, a major barrier to partnering is public procurement legislation, which aims to avoid biased procurement decisions and facilitate competition. Since procurement cannot be founded on a company's willingness and demonstrated ability to adhere to partnering ideals or trust-based negotiations, laws are often seen as working against collaborative relationships (Larson, 1995; Eriksson et al., 2008). Cook and Hancher (1990) believe that the final barrier to successfully implementing partnering is the significant time required to develop and implement a partnering agreement.

Partnering does not always benefit both parties, nor may it always be beneficial for the project. Cook and Hancher (1990) and McGeorge and Zou (2012) summarised that potential disadvantages and/or major concerns associated with partnering comprise: stale ideas; protecting proprietary information; investment risk; dependency risk; corruption; integrating different company values; and obtaining and maintaining total commitment.

This research has previously discussed the rationale of companies regarding the protection of proprietary information and need for safeguards to minimise opportunistic behaviour. Converse to the

confidentiality of company information is the notion of stale ideas between partners. McGeorge and Zou (2012) note that stale ideas can arise between partners due to the lack of stimulation which can occur when the same partners are in a stable relationship and stimulus of new companies is missing. Thus, the drive for innovative and new ideas, may lead companies to favour project partnering over strategic partnering, and could go some way to explaining the variability between project partnerships in the New Zealand industry. Remaining with the reasons which could influence the variability of project partnerships is the ideals behind dependency risk. Cook and Hancher (1990) and McGeorge and Zou (2012) agree that there is a risk that the partners become too dependent on each other. To minimise this risk, literature has suggested that companies should spread their partnering agreements over a range of partners. By having multiple partnering agreements, investment risk can also be minimised. Investment risk is the consideration that the joint development for the project could be risky if the single project partnership does not extend into future contracts.

Dyer and Singh (1998) suggested that a primary reason for failure of partnerships is not that two companies do not possess strategic complementarity of resources, but rather because they do not have compatible operating systems, decision making processes and cultures. This aligns with the view of Cook and Hancher (1990) regarding the integration of different company values as being one of the major concerns associated with partnering. Cook and Hancher (1990) observed that obtaining and maintaining total commitment is another of the disadvantages associated with partnering. Larson (1995) found that it is not unusual for relationships to change during a project i.e. if participants violate the partnering agreement it may degenerate back into an adversarial relationship. Similarly, Osarenkhoe (2010) noted that a shift in strategic priorities of a company, or a loss of leadership, which makes a partner less attractive than it was earlier, are both drivers that shift the balance from a more co-operative mindset to a more competitive mindset. Following on from this, Clarke-Hill et al. (2003), observed that the choice between competitive and co-operative strategies describes what is often an uneasy balance of partner calculation. One of the reasons for the breakdown of partnerships is when a partner decides it can gain more from resuming competition than from continuing with co-operation. This may damage perception of the company with its partner and limit the likelihood of future interactions. For a small industry, such as New Zealand, with limited partnering options, it may be paramount that relationships are satisfactorily maintained as to provide future, long-term, partnering prospects.

Kaluarachchi and Jones (2007) and Ng et al. (2002), summarised aspects which can be considered detrimental to the partnering process, and act as catalysts toward the breakdown of partnerships. These have been divided into internal and external factors as to highlight whether the partnering companies can readily influence and improve on these aspects (internal) or whether they are conditions of the industry which must be navigated (external). The factors are listed below:

Internal:

- Partners have a short-term focus or adversarial attitudes toward one another.
- There is a lack of understanding around the partnering process.

- Partners are reluctant to commit to the partnering process or unwilling to compromise.
- Lack of continuous open and honest communication, failure to share information.
- Issues are allowed to slide and escalate.
- Commercial pressure compromising the partnering attitude.
- Key sub-contractors not included in the partnering process.
- Partnering is not suitable for a particular project.

External:

- The complexity of the partnering agreement.
- Conservative industry culture.
- Laws and regulations.
- Traditional procurement procedures or use of competitive tendering arrangement.
- Expectation for sustained performance.

As found by Eriksson et al. (2008), clients adopt public procurement practices to maximise participation and ultimately obtain a lower price. However, Flanagan, Lu, Shen and Jewell (2007) note increasing dissatisfaction with lowest price frameworks. This is because construction projects seek to achieve value for money and are becoming increasingly complex. A sole focus on lowest price has been seen to cause downstream problems such as prolonged construction times, poor quality and unsustainable tendering practices. However, in practice public clients still favour lowest price frameworks, as they are defensive about scrutiny and criticism over their budgets and expenditure (Flanagan et al., 2007). The award of a contract to a supplier based on lowest tender price alone could provide a false economy if there are late deliverables, or other unsatisfactory performance resulting in additional contractual or administrative costs (Scheepbouwer, Gransberg and Puerto, 2017). Larson (1995) and Eriksson et al. (2008) agree that the binding nature of competitive tendering arrangements in construction procurement decreases commitment between parties and prevents the necessary flexibility to work out optimal solutions when unexpected problems arise.

The breakdown of relationships and deterioration of partnerships can be traced back to companies acting out of self-interest. While partnering relationships will change with time, catalysts which negatively influence partnerships are more likely to occur from opportunistic behaviour at another company's expense. To ensure that future partnering opportunities are possible, companies must carefully balance their interests with how other companies perceive them. How this is achieved needs to be further explored.

2.7 Collusion

Relationships between companies within the industry need to be carefully balanced. With increases in collaborative models, many companies who have previously competed are now aligning for projects. With this comes the concern that either inadvertently, or more insidiously, collusion may develop. Anti-competitive practices have been previously witnessed in the international construction industry. By examining these cases, the prevailing conditions, and the measures established to prevent collusion from reoccurring, the susceptibility of the New Zealand industry can be examined.

In New Zealand, under the Commerce Act 1986 and the Commerce (Cartels and Other Matters) Amendment Act 2017 contracts, arrangements, or understandings substantially lessening competition are prohibited. No person may enter into or give effect to 'cartel provisions', where the Commerce Act (2017) defines a cartel provision as one or more of 'price fixing', 'restricting output' or 'market allocation'³ in relation to the supply or acquisition of goods or services. However, regarding cartel provisions there are exceptions which allow company's in competition to work together. Section 31 of the Commerce Act 1986 identifies one such exception as entering into a 'collaborative activity'. This entails a venture or activity that is carried out in co-operation by two or more persons and is not carried on for the dominant purpose of lessening competition between two or more of the parties. Further exceptions, identified in the Commerce Act 1986 and 2017, are for vertical supply contracts and joint purchasing agreements; both of which are commonly observed in New Zealand.

A previous study into collusion by the Commerce Commission (2017) targeted the construction industry due to its international reputation of being prone to anti-competitive behaviour. Features identified in the Commerce Commission (2017) findings that were considered to make collusion in New Zealand more likely, comprised:

- Repeat bidding by the same companies for similar products or services;
- Few substitutes for construction products and services; and
- Rules around bidding for public works (i.e. transparency) making it easier for suppliers to rig bids.

The construction industries in the Netherlands, South Africa and Canada were previously implicated in collusive or anti-competitive behaviour. Literature from these three cases was reviewed and the factors which facilitated and/or allowed collusion to arise are summarised in Table 4. Some of the factors identified are specific to individual countries (i.e. the legacy of apartheid in South Africa) and have not been included. Thus, Table 4 summarises the key factors which are more readily comparable to the New Zealand context.

³ See Commerce Act (1986) or the Commerce (Cartels and Other Matters) Amendment Act (2017) for definitions.

Table 4: Contributing factors to collusion in the construction industry

Factors Aiding Collusion	Netherlands*	South Africa**	Canada***
The significant value of public procurement contracts.		Yes	Yes
Public tendering procedures and selection based on the lowest conforming tenders.	Yes	Yes	Yes
Close relationships between companies (senior managers) and clients.	Yes	Yes	
Insufficient time limits for submitting bids.			Yes
A specific number of companies were required to tender for a project if it was to be awarded.		Yes	
Blacklisting from projects or unfavourable future scoring if a tender was not submitted.		Yes	
Shared attendance by company representatives at site visit meetings prior to tendering.		Yes	
Significant vertical integration in the industry, with a few large companies controlling resources.		Yes	
The formation of joint ventures by construction companies tendering for large projects.		Yes	
High rate of recurrent contracts or transparent procurement letting project values be predicted.	Yes		Yes
A lack of product differentiation making it difficult for a company to get ahead of their competitors.	Yes		
High entry and exit barriers limiting competition (i.e. geographically removed).	Yes	Yes	
Industry characterised by a small number of large companies that are active across the market.	Yes	Yes	

* Doree (2004); ** Wilson (2015); *** Pitre & Houle (2016) and Chaster (2018)

In the literature, collusion is often linked to theories about oligopoly. The number of companies in a market is seen as an important factor; with smaller numbers of companies expected to be more prone to collusion (Doree, 2004). Yet, as reported by (Doree, 2004), Wilson (2015), Pitre & Houle (2016) and Chaster (2018) for cases within the Netherlands, South Africa and Canada respectively, large construction industries consisting of numerous companies, of all sizes, were prone to collusion.

For the three international cases reviewed, there are similarities both with each other and aspects within the New Zealand construction industry. A reoccurring theme in each case of collusion was the award of projects based on the lowest conforming tender. Furthermore, (Doree, 2004), Wilson (2015) and Chaster (2018) each observed that collusion had been present for tens of years and endemic within the construction industry. Doree (2004) noted that the Dutch construction industry was perceived as a highly developed sector, with high levels of co-operation between companies. Conflicts were often solved through compromise because, in a small country, it was acknowledged that the parties involved will meet again (Doree, 2004). Reportedly, collusive or anti-competitive practices were carried out to reduce the risk for those involved. Collusion made companies less vulnerable to predatory pricing, and reduced fluctuations in workload (Doree, 2004). Ultimately, the reduced rivalries created a more stable and predictable environment in which motivation for future work outweighed concerns of legal action.

Following identification of collusion, subsequent measures to prevent its continuation were recommended in each of the three cases. With respect to South Africa, Wilson (2015) stated that to shift away from the collusive behaviours that had previously marred the industry, intervention should include aspects such as:

- Ensuring construction companies do not undertake projects beyond their capacity.
- Introducing measures to support emerging companies to participate in large infrastructure projects i.e. promoting emerging construction companies through skills transfer by large construction companies.
- Encouraging foreign construction companies to tender for large infrastructure projects.

Similarly, Pitre and Houle (2016) note one of the recommendations of the Charbonneau Commission was reducing payment delays in construction works. The lack of funds that ensues limits competition and growth of companies by restricting their ability to undertake new projects; this was seen to further penalise small and medium-sized companies (Pitre and Houle, 2016). Doree (2004) and Wilson (2015) conclude that to improve the situation in the construction industry, different procurement methods with less emphasis on lowest bids is required. This reflects the earlier views of Latham (1994) and Egan (1998).

This literature review has expanded on the partnering process and sought to incorporate views, findings and themes published in subsequent years. It has examined factors which have successfully enabled partnerships to have been developed, and conversely, reasons they have failed. While research leans in favour of partnering, there is a lack of information and clarity regarding how partnering is initiated, the qualities sought after and why variability in relationships is common. This research will seek to fill the current gap in theory.

Considering the required balance of competition and co-operation, and the complexities of inter-company relationships, previous research appears to have oversimplified or ignored many of the initial considerations faced by companies when looking to partner. Another aspect overlooked, but which

underlies much of literature, was the influence of personal relationships. Personal relationships are anticipated to have a significant influence on the partnering process. The introduction of personal relationships brings with it considerations for behavioural tendencies, subjectivity and other individual characteristics. The ideal qualities to possess for partnering are scattered through literature and founded on low levels of agreement. These qualities are often expressed as products of other more fundamental characteristics. Through interviews of industry experts this research will provide insight into the above gaps in theory. Highlighting this could assist in shifting current perspectives, and ultimately lead to healthier relationships between companies. There is no reason success of one party should solely come at the expense of another; this is something the partnering philosophy seeks to change.

3 Research Methodology

It is evident from the literature review that the partnering process is not well defined. Initiating and maintaining partnerships, and balancing co-operation and competition is a complex phenomenon closely linked to sociology. To investigate these aspects, exploratory research has been adopted. Exploratory research is suited to the identification of patterns, ideas, or hypothesis (SAGE Publications, 2019) and is an approach that is primarily concerned with the discovery and generation of theory (Jupp, 2006).

To satisfy the aim of this research in identifying how companies balance competitive and collaborative interactions without transgressing toward collusive behaviours, a five-part research process was implemented. To aid visualisation of the scope, the research process is illustrated in Figure 2. The first four stages of the research method process are discussed in the subsequent sections of this chapter.

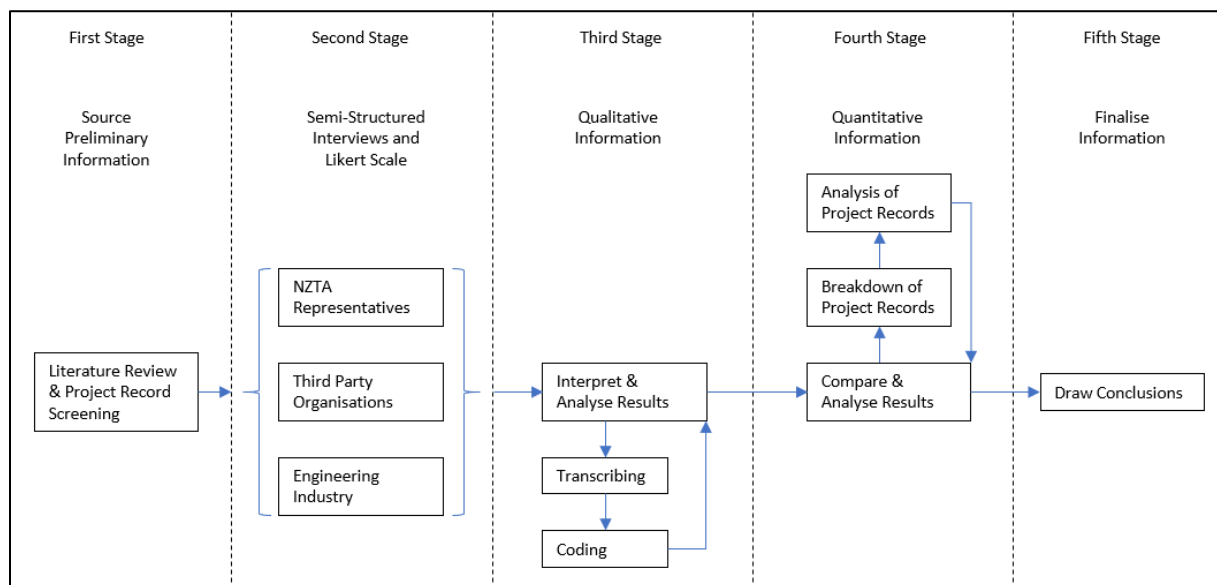


Figure 2: Research method process

3.1 Source Preliminary Information

Information on previous project records was gathered from the NZ Transport Agency's online database⁴, which keeps record of all awarded contracts. As at 25th April 2017, 3,462 project records were retrieved from the online database, detailing project information such as the contract name, date awarded, successful tenderer, number of tenderers, delivery model, price range, accepted price, contract price estimate, and region. In addition to the project records available through the online database, an Official Information Act (OIA) request was submitted. The OIA request sought to identify companies who had tendered on projects with a construction cost greater than \$5 million; as projects with a construction cost of less than \$5 million are considered small projects (NZ Transport Agency, 2014) and were, therefore, unlikely to have been delivered through collaborative models. Under the OIA request, information was supplied for 32 projects. The OIA response noted that "consortia typically

⁴ <https://www.nzta.govt.nz/about-us/tenders-and-contracts/contracts/?status=Awarded>

apply to NZ Transport Agency's larger contracts; alliance, design-construct and maintenance contract." (NZ Transport Agency, personal communication, September 27, 2017). The information obtained from the NZ Transport Agency's database and OIA request was used to identify companies who had previously been involved in project partnering, and to determine industry trends. By using the project records to identify companies that had previously partnered, it avoided an oversized scope and focused on a smaller sample. Furthermore, in line with Kelle (2006), by firstly undertaking a quantitative assessment of the project records, it offered the benefit of identifying areas for research questions which needed to be further investigated. Thus, the project records, in conjunction with reviewed literature, formed the basis for the interview questions.

3.2 Semi-Structured Interviews

As people and their opinions are the focus of this research, a qualitative research method was adopted. To gather information, expert opinions were sought through semi-structured interviews. Semi-structured interviews were considered more beneficial than structured interviews or questionnaires, as the interviewees may provide information or perspectives outside of what was originally considered. This method of interviewing also gave the researcher the freedom to pursue emergent data introduced by what the interviewee was saying (Choo, Garro, Ranney, Meisel, & Guthrie, 2015). Semi-structured interviews also provide comparable results as the same question set is used to structure the sessions. Diefenbach (2008) noted that criticism of research primarily based on qualitative findings from interview data arises from the selection of interviewees, as results are solely based on a minorities perspective, excluding views of others. Therefore, the target participants of the interviews were people from across the engineering industry who influence the choice of partnering with other companies.

3.2.1 Sample Population

Inclusion and exclusion criteria were used to define the sample population. While the more criteria which are applied to define the boundary of the sample size add to the overall homogeneity of the sample, heterogeneity is still sought to ensure findings are not solely the preserve a particular group (Robinson, 2014). While no exclusion criteria were placed on sources of homogeneity such as demographics or geographical locations, inclusion criteria required that companies had partnered before, and that the companies operate within the New Zealand roading sector. An exception to these criteria was made for participants from external, third-party, companies and associations across the industry (e.g. procurement specialists and contractor / consultant associations); as they are in a position which offers a unique perspective on partnering while not being directly involved. Furthermore, individual participants from companies which met these criteria were required to be experts in their fields.

Building on the identification of relevant companies to participate in the research, people still needed to be identified. Snowball sampling, or referral sampling, was adopted. Participants were asked to provide recommendations of expert acquaintances who might qualify for participation (Robinson, 2014). As there is ambiguity and subjectivity surrounding the term expert, this research sought to minimise this by firstly approaching people that hold positions on industry advisory groups; a position which could be associated with the notion of being an expert. As not all companies have representatives on industry

advisory groups, the experts first interviewed assisted in identifying peers from other companies. As with the semi-structured interviews, this research is reliant on the opinion and expertise of participants, which in this instance was used to validate the involvement of others.

Two sampling methods were used for data collection; purposive sampling and quota sampling. First, due to the exploratory nature of this research, purposive sampling was adopted and participants from different companies were approached. Purposive sampling ensured that certain individuals which had unique, different or important perspectives on the phenomenon in question were present in the sample (Robinson, 2014). Second, quota sampling was adopted in which both categories and a minimum number of respondents was specified. As interviews progressed and information was gathered, the quota was monitored to ensure it was being met. By using minimum quota, this strategy ensured that key groups were sufficiently represented in the sample, while providing flexibility in the final sample composition (Robinson, 2014). The quota adopted for this research was as follows:

- At least 4 contractors with experience in partnering.
- At least 4 consultants with experience in partnering.
- At least 1 representative from the NZ Transport Agency.
- At least 1 representative from a third-party organisation.

This research sought to form a holistic perspective by including participants across all areas of the engineering industry. A representative from each of the main NOC suppliers (contractors and consultants) was invited to participate in this research. By basing the respondents around involvement in NOCs (as opposed to other procurement models) the entire population could be sampled, and findings could be considered statistically representative of the population. A sample of secondary consultants and/or contractors were also approached. The number of these smaller suppliers servicing NOCs was too large to warrant including the entire population. While their involvement in partnering arrangements is of both interest and importance, their ability to dictate the formation of partnerships is anticipated to be less than the larger companies, and thus were of an ancillary interest.

Overall, the study invited 15 representatives from different companies across the industry to participate in interviews. Of the 15 participants, 11 accepted and partook while the remaining 4 did not respond. An uptake of 73% of representatives was considered appropriate for the sample size and as the quota sampling criteria was met further interviews were not sought.

3.2.2 Interview Development and Likert Scale

The interview questions were developed based on key findings from the literature review and screening of project records. Prior to undertaking the semi-structured interviews, ethics approval was obtained from the University of Canterbury's Human Ethics Committee. A copy of the information sheet, consent form and interview questions are included in Appendix A. In line with the research objectives, questions

focused on four main areas: factors affecting partnerships, characteristics that companies seek in a partner; the rationale for forming partnerships; and balancing competition and collaboration.

The majority of questions followed a standardised open-ended format. In each interview the question form and sequence remained constant unless there was a point of interest worth clarifying or expanding upon. When deviating from the prescribed questions, further open-ended questions were utilised which ensured answers were not suggested to the respondent. Walliman (2011) noted that open formatted questions offer the advantage of eliminating bias from respondent's answers, as they are free to answer in their own way. For fixed responses, closed-questions were considered appropriate.

The qualities identified through literature (Table 3, Chapter 2) were scored by interviewees, using a Likert-type scale, to see if they matched the industries perspective. A seven-point scale was adopted based on the work of Symonds (cited in Matell and Jacoby, 1971), who believed it provided optimal reliability; beyond a seven-point scale any increases in the number of steps was considered not to yield justified improvements in reliability. Furthermore, the seven-point scale was adopted to allow respondents a neutral option; which is a legitimate opinion that exists (Gwinner, 2018). The midpoint also removes bias from forcing respondents to choose between a positive and negative response.

The interview was initially undertaken by one participant to gather information and provide feedback. The pilot interview covered the full set of questions and aimed to ensure that questions were appropriate, did not lead the interviewee toward areas considered to be commercially sensitive, and confirm that the interview was not onerous on participants. The final form of the semi-structured interview was estimated to take around 60 minutes to complete.

3.2.3 Interview Process

Prior to the interview, the sample question sheet was issued to the interviewee(s). This allowed participants time to consider their responses and enabled the interview to proceed in a fluid manner. Emphasis was placed on face-to-face interviews as they offered advantages, such as building rapport, comprehension and the transmission or interpretation of meaning; monitoring of responses and emotions, levels of interest and attention; and managing the duration of interviews (Irvine, Drew, & Sainsbury, 2012). Some of the participants required for interviews resided outside of the Christchurch region. In these instances, video calls were conducted as to save time and travel associated costs. While they were not the preferred form of interview, video calls still provided a degree of personal interaction and most of the aforementioned benefits. Throughout interviews significant effort was made to avoid influencing responses by only clarifying questions and not providing an opinion on any of the topics discussed. Minimal prompts were given during the interviews to avoid introducing any bias in participants responses. Interviews were recorded with the permission of the interviewee and transcribed.

Of the 11 interviews, 6 were undertaken face-to-face, 4 over skype, and 1 over the phone. Participants interviewed typically held managerial or chief executive positions. The demographic of participants comprised 10 males and 1 was female. Participants experience in the industry ranged from 3.5 – 43

years; this range was the same for years of service at their respective companies. On average, participants had been with their company for 15 years and within the industry for 27 years.

3.3 Qualitative Information

Information generated through interviews was then interpreted and analysed. Lapadat (2012) noted that historically researchers have applied thematic analysis primarily to textual data. Thematic and content analyses were considered an appropriate form of qualitative screening. Both thematic and content analyses are analytical based procedures which systematically identify themes or patterns in the form of excerpts, quotes or entire passages of text; coding and classifying data into major themes and categories; and interpreting the resultant structure by seeking commonalities, relationships or explanatory principals (Bowen, 2009 and Lapadat, 2012). For this research comparisons were made between participant's responses. The process for assessing interview results is discussed in the following sections.

3.3.1 *Transcriptions*

Intelligent verbatim was adopted for transcribing the audio records from interviews. The focus of the interviews was to capture what was being said, the way in which it was said was not considered a metric of the research. Unlike verbatim transcriptions, interviewees' pauses, repetition, stutters, coughs, etc. which were deemed redundant could be omitted from the record. Thus, the intelligent verbatim transcription could be considered to provide a more readable transcript while conveying the intended meaning of the participants.

Transcribing was undertaken solely by the researcher as Halcomb and Davidson (2006) note that with research underpinned by theoretical frameworks such as phenomenology, the closeness between the researcher and their data is considered critical to both the research design and methodology. Additionally, it was considered beneficial for the researcher to transcribe their own interview data, given they had first-hand knowledge from their previous involvement and the advantage of having participated in both verbal and non-verbal exchanges with the participants (Halcomb and Davidson, 2006).

The confidentiality of the respondents' identities was maintained by assigning a code to de-identify their contributions. This code is subsequently used on the published transcripts. Transcripts have been withheld based on agreements with interviewees and aspects of commercial sensitivity. De-identified and redacted, transcripts are available upon request.

3.3.2 *Integration and Coding*

One of the most critical elements of the research is the integration and application of the qualitative results. Thematic analysis of patterns in conjunction with content analysis was used to screen and compare each of the transcribed interviews. The process of thematic analysis is well described by the framework of Castleberry & Nolen (2018); their analysis of qualitative data involves five steps: compiling, disassembling, reassembling, interpreting and concluding.

The first step, compiling, involved transcribing interview records so they were in a consistent and organised format. Secondly, disassembling the data involved taking the data apart and creating meaningful groups (Castleberry & Nolen, 2018). This was achieved through the elemental method of structural coding. Structural coding was adopted due to its particular applications with research involving multiple participants; semi-structured data gathering protocols; and exploratory investigations to gather topic lists or themes (Saldana, 2013). Coded segments were then collated in preparation of more detailed coding and analysis. Further disassembling and coding of the data was undertaken using pattern coding. Pattern coding was implemented as the second coding cycle due its allowance of grouping summaries into a smaller number of sets, themes, or constructs (Miles and Huberman, cited in Saldana, 2013). In the absence of a priori, the coding schemes were emergent in nature and were developed during the coding process. Textural data was predominantly organised and coded manually; the software programme 'NVivo 12' was used supplementary to assist thematic analysis.

The final steps, reassembling, interpreting and concluding involve sequentially building on one another. Codes were put into context with each other to create themes, which were interpreted, and relationships between themes and findings were discussed, becoming the foundation for the research's conclusions.

3.3.3 Data Validity

Validation of the results was achieved through triangulation. Flick (2011) defines triangulation as the attempt to combine multiple methods, measures, methodologies or theories in a variety of ways to cross-check findings, often on the assumption that the weaknesses of any single such element will be compensated by the strengths of others. With respect to the aforementioned, data triangulation has been employed as a means of validating this research. Denzin (as cited in Flick, 2011) notes data triangulation as studying the same phenomenon in different ways. Specifically, for this research, the purposive and systematic selection of interview participants has been employed to generate perspectives from across the industry (i.e. the inclusion of consultants, contractors, NZ Transport Agency, and third-party organisations). Additionally, quantitative information was used to supplement interview responses.

3.4 Quantitative Information

The project records were further used to substantiate information gathered from interviews and provided a quantitative insight into the research objectives. The project records dated back to circa 2001, depending on the geographical region. As such, information was examined between the periods of 2001 and 2017; noting that complete records were not available for the years 2001 and 2017 due to initial and ongoing documentation of records respectively.

The NZ Transport Agency State Highway Procurement Strategy (NZ Transport, 2014) notes that depending on the project cost, specific delivery models may be more appropriate (i.e. D&C where estimated cost is greater than \$50M). Based on this financial guidance for delivery models and the OIA response, the initial \$5M screening methodology was adjusted and results were limited to projects with an accepted value greater than \$40M. With \$40M being based on the lowest financial threshold of large

contract types (D&C >\$50M) provided by NZ Transport Agency (2014) and allowing for a 20% margin on price. Larger value contracts were considered more likely to reflect a greater project size, increased complexity and/or risk. By using the \$40M threshold as a proxy for these considerations the projects identified were likely to require more collaborative arrangements such as Alliances, D&C, ECI, NOCs or PPP.

The primary focus of analysing the project records was to determine all previous projects in which companies successfully partnered or formed a consortium. The project records also allowed a secondary focus in which factors influencing partnerships could be examined. The analysis of trends was limited to two main sets of independent and dependent variables. These were:

Independent Variables:

- Year (2001 – 2017)
- Geographic Region

Dependent Variables:

- Number of contracts
- Sum of project value

4 Factors Influencing Partnerships

Before this research can explore the rationale employed by companies when partnering, and qualities sought after, an understanding of the factors which influence partnerships is first required. Decisions to partner may be influenced externally by the surrounding environment or internally through company pressures, both of which will alter perceptions on competition. As such, this research used semi-structured interviews to identify the factors that influence partnerships. Previous research has largely focused on the benefits derived from partnering with little consideration given to the initiation of partnerships. Harback et al. (1994) and Wilson et al. (1995) identified factors to consider when determining the appropriate level of involvement in a project. Similarly, Li et al. (2000) summarised high-level external factors influencing partnerships across the construction industry. These previous findings, however, do not reflect the specific context of the New Zealand engineering industry, nor the adoption of more collaborative delivery models.

This chapter examines the external and internal factors that are considered to influence partnering considerations. The first section provides an understanding of the project records and their interpretation in this research. This information is then used to quantify changes to project characteristics and, where applicable, support the factors influencing partnerships presented in the latter sections.

4.1 Interpretation of Data

Of the 3,462 project records retrieved from the NZ Transport Agency's online database, 52 were above the \$40M threshold adopted for inclusion in this research. A sensitivity analysis was undertaken on the data to validate the project price. The projects contract estimate was compared to the accepted price to identify any variance. Of the 52 projects, nine were noted as having a difference greater than 100%. This was used as an initial screen to determine incorrect entries. Of the nine projects:

- 6 projects had contract estimates of \$0 giving rise to the discrepancy; and
- 3 projects had miss-entered contract estimates or accepted prices.

Further research into each of the nine identified projects revealed that the accepted price was generally comparable to the proposed contract works, and the error was determined to have come from the reported contract estimates. One project (professional services as opposed to physical works) was excluded as the accepted price was found not to reflect the contract description.

The remaining 51 projects, each with a value greater than \$40 million, made up 1.5% of the total 3,462 projects. However, this 1.5% accounts for 66% of all project value. This highlights the significance of these projects within the industry and justifies focusing on their influence with respect to partnering.

4.1.1 Delivery Models

The delivery model breakdown of the 51 projects is given in Table 5. Closer observation of the physical works projects found that some projects were ‘Build Only’; as these projects do not require partnering, they were removed from the data set. Several projects were also added to the project list, such as Transmission Gully and Puhoi to Warkworth Motorway, both of which were PPP⁵. Additionally, several NOCs were included in the final list of projects, despite some not meeting the criteria of \$40M; as it is known that they require both a main contractor and a consultant, and sub-contractors / sub-consultants. Thus, are relevant due to the necessary formation of consortium.

Table 5: Comparison of delivery model breakdown

Initially from NZ Transport Agency data base	Following manual update of project information
43% Physical works	28% Physical works
37% Network Outcomes Contract*	43% Network Outcomes Contract
6% Alliances	9% Alliances
6% Design and Construct	6% Design and Construct
6% Traditional (either M&V or LS)	6% Traditional (either M&V or LS)
2% Early Contractor Involvement	2% Early Contractor Involvement
	4% Public Private Partnership

⁵ Due to the expenditure of PPPs not being sourced from public-procurement (i.e. NZ Transport Agency), the projects have not been included in the quantitative results (Sections 4.2 and 4.3). However, partnering of the companies involved has been considered.

4.1.2 Geographical Regions

The NZ Transport Agency database divided projects into eight 'regions' based on their location. The regions and indicative boundaries are summarised in Figure 3. A 'national' classification is considered where a project encompasses multiple regions.



Figure 3: Geographic regions within New Zealand

4.2 Project Location

Analysis of the project records compared the change in both the number of contracts and contract value with respect to the different geographic regions. Figure 4 and 5 summarise the results of the analysis for 'All Projects' and 'Projects > \$40M' respectively. The tabulated data from the analysis is included in Appendix B. Taking the results for 'All Projects' two things are apparent. Firstly, 69% of all project expenditure is based around the Auckland and Northland, and Waikato and Bay of Plenty regions. Secondly, more than 70% of projects have been undertaken within the North Island. Using the available project information, the correlation between the number of contracts and project value was determined to be 0.97; indicating a strong positive relationship.

The results for 'Projects >\$40M' mirror those of 'All Projects' across each of the regions. For 'Projects > \$40M', the percentage of project expenditure based around the Auckland and Northland, and Waikato and Bay of Plenty regions increases to 81%. Similarly, the percentage of projects undertaken within the North Island increases to more than 75%. From the analysis of project records, it is evidenced that both the number of projects and project value are dependent on the geographical location.

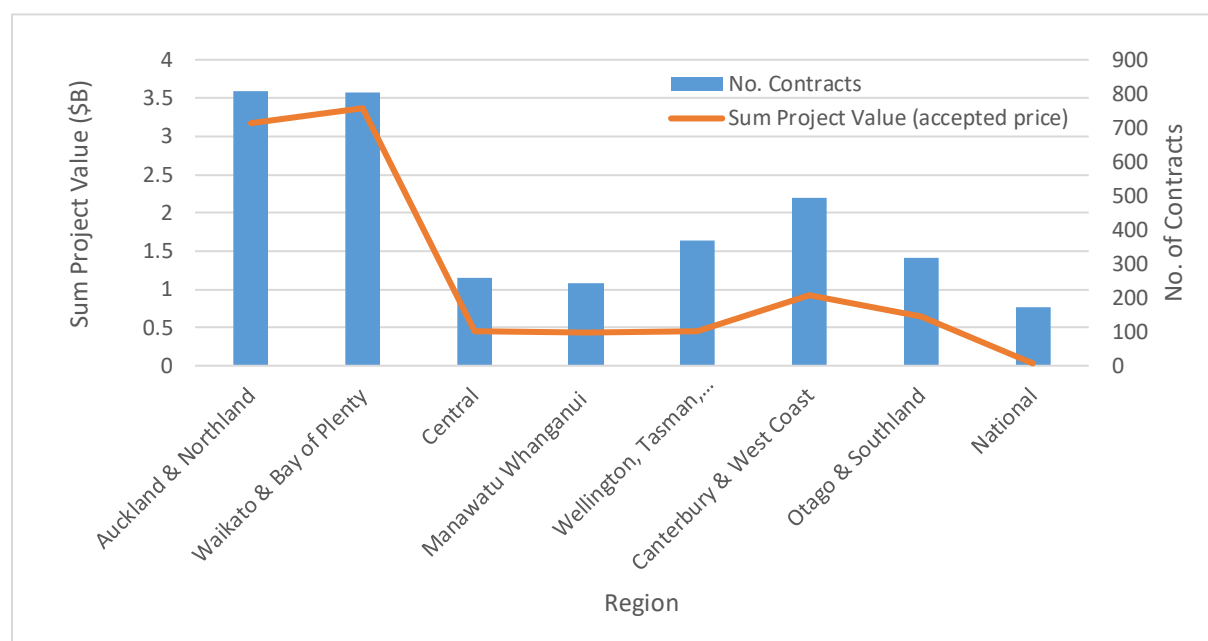


Figure 4: All Projects - variation in contract no. and value with location

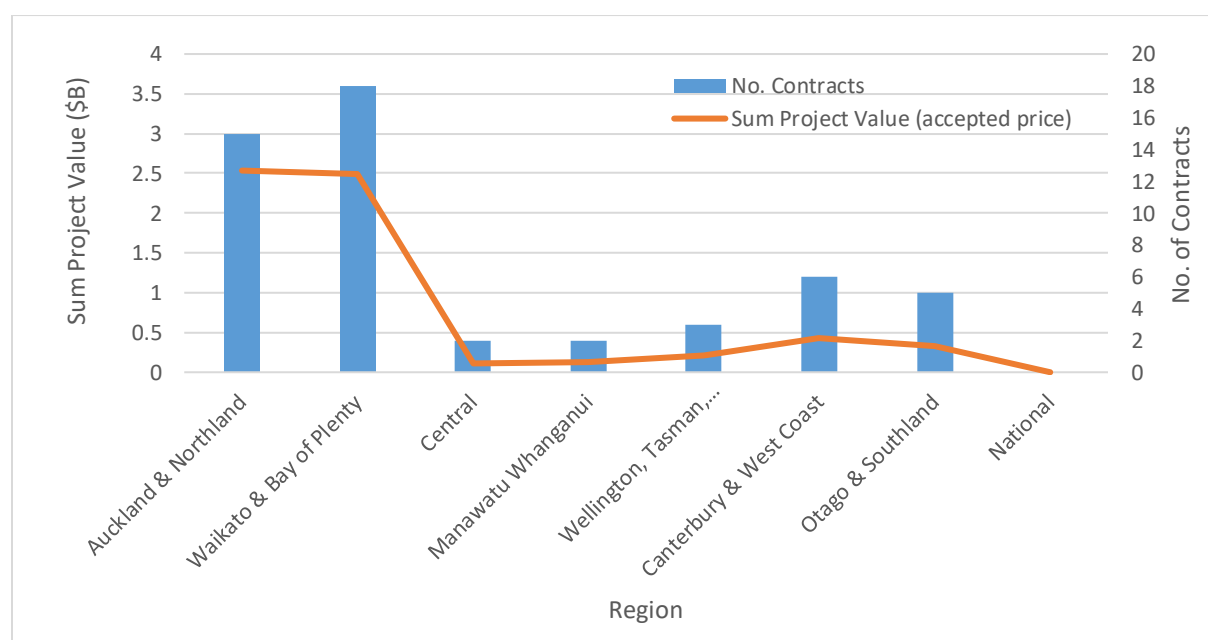


Figure 5: Projects > \$40M - variation in contract no. and value with location

The influence of project location on partnering was examined through semi-structured interviews. All interviewees agreed that the location of the project, and by extension the location of a suitable partner, was an influential factor. Furthermore, 7 out of the 11 interviewees touched on the change in dynamics

as a result of undertaking projects in remote locations; specifically, around competition, acquiring the right resources and people. Synthesis of interview responses with respect to the project location found that some of the most prevalent changes to how competition is perceived was around geographically isolated areas. To compete in these locations, smaller, regional, companies are forced to partner with larger dominant companies. In many instances these smaller companies can only partner with one consortium, hinging their entire stake in the project on one set of partners (zero-sum game). If the consortium is unsuccessful this can have a greater impact on smaller companies, which depend on securing forward workload. This is further exacerbated by the increased duration of larger projects and the subsequent period until they can be retendered. Some interviewees noted that this has driven a more defensive mentality in which people are more inclined to partner in order to secure a portion of the work.

Following the loss of a large project and the possible changing dynamic within a region, one positive identified from interviews was the subsequent competition in other areas. Companies which were unsuccessful now had capacity to service other clients and projects. It is becoming increasingly common for companies to centralise resources around geographical areas which yield the greatest proportion of work. Based on the analysis of project records, Central, Manawatu Whanganui, and Otago and Southland regions are expected to have a smaller industry presence. Thus, the geographic location of a project was identified as a factor which would influence partnering considerations; particularly with respect to its influence on competition and the availability of partners in remote locations. The extent that the geographical location and underlying aspects are sought after when partnering is further examined in the next chapter of this research.

4.3 Project Size

Four interviewees noted projects were being aggregated, becoming larger and more encompassing. By amalgamating services under a single contract, it aimed to deliver greater efficiencies and value-for-money. It was the opinion of interviewees that by bundling these works, contracts would also become increasingly complex. While other interviewees did not explicitly cite project size but instead referred to the increased complexity or increased duration, it can be reasoned that these aspects will be proportional to the size of a project. It was apparent from interviews that because of larger projects, or increased complexity, companies partnered to maximise their capability and capacity; to attain forms of competitive advantage.

Analysis of the NZ Transport Agency project records was used to quantify what interviews had found; that increases to project sizes were driving more collaborative partnering arrangements. The analysis of project records compared the change in both the number of contracts and contract value with respect to time. Figure 6 summarises the results of the analysis for 'All Projects'. The tabulated data from the analysis is included in Appendix B.

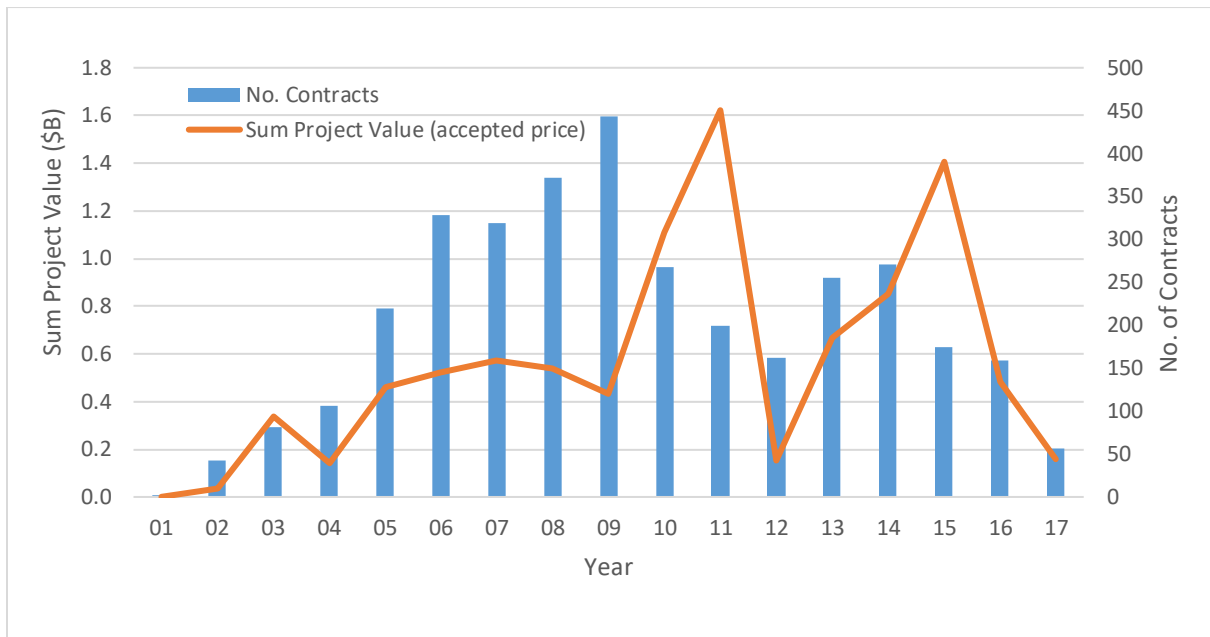


Figure 6: All Projects - variation in contract no. and value with time

Figure 6 shows that in 2011 and 2015 project values peak and are considerably higher than any other year. These peaks can be attributed to large projects, specifically the Waterview Tunnel (2011), a \$1.2B project; and both the Hamilton and Huntley sections of the Waikato Expressway (2015) at \$1.1B combined. The correlation between the number of contracts and sum of the accepted project value is 0.37; indicating a weak to moderate positive relationship. This correlation is much lower than the results with respect to project location. In relation to time, large spikes in project value coincided with periods of fewer contracts. However, for project location, as most of the projects are undertaken in the upper North Island, peak project values are evened out by the larger distribution of contracts in the respective areas.

From Figure 6, the number of contracts from the inception of data in 2001 increases through to almost 450 in 2009; following this the number of contracts reduces and converges toward 150 -200 annually. Conversely, the sum of the accepted projects value, which was relatively constant from 2001 to 2009, becomes substantially more variable in the later years. Combining the two metrics gives an average project value of \$0.8M to \$8.1M in any given year. Considering a simple linear trend, the average project value increases by around \$200,000 each year (not taking into account inflation), while the number of contracts decreases. It could be argued that the resulting market conditions (fewer higher value projects) drive defensive mentalities, whereby companies partner to secure a smaller portion of work as opposed to missing out.

While the examination of 'All Projects' provides trends around the industry in general, consideration of projects greater than \$40M is also important, as it was assumed these projects would have increased opportunities for partnering. Figure 7 summarises the results of the analysis for 'Projects > \$40M'.

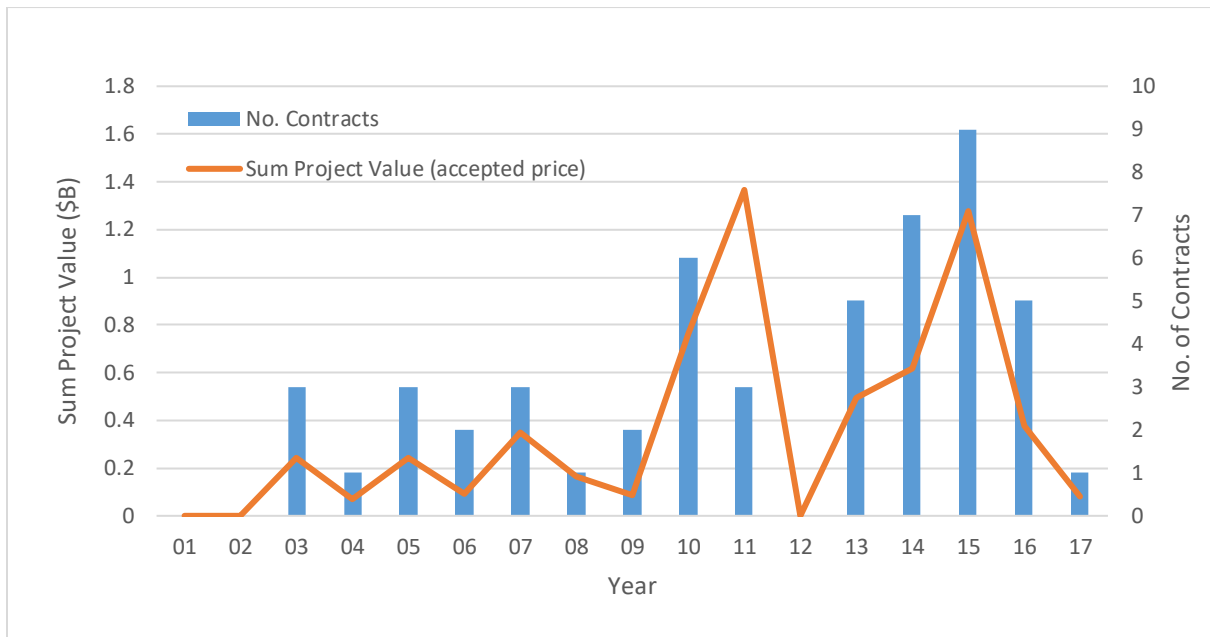


Figure 7: Projects >\$40 M - variation in contract no. and value with time

For 'Projects > \$40M' the correlation between the number of contracts and sum of accepted project value is 0.75; indicating a moderate to strong positive relationship. The correlation is greater than 'All Projects' due to the contract values being more comparable and consistent. For 'Projects > \$40M' the project value mirrors the trend identified in 'All Projects'; relatively consistent from 2001 – 2009 and then experiencing more variability, with peaks in 2011 and 2015. For these larger projects, the average value generally ranges between \$50M and \$150M and is growing at an increased rate of around \$3M each year (not taking into account inflation) considering a simple linear trend.

Contrary to 'All Projects', the number of contracts greater than \$40M is, on average, increasing each year. From the trends identified, it would be expected that the overall number of projects will decrease but the respective value of these projects is likely to increase, and by extension, the complexity and/or size of the projects will also increase. This concept is supported by the sequence of changes and standardisation of road maintenance contracts. This standardisation sought to aggregate services (increasing the scope and complexity of contracts) and decrease the number of contracts (increasing size) to achieve value-for-money. This aligns particularly well with the results obtained through interviewing industry experts; and is expected to influence the levels of competition within the industry. Thus, project size was identified as an external factor which would indirectly influence partnering considerations.

4.4 Project Duration

As identified in the previous sections, project duration can be related to the project size. Notwithstanding, interviews identified project duration as having further, separate, influences on partnering. Both the increased duration and reduced number of contracts can have adverse influences on the industry. The aspects reduce both the frequency and number of occasions companies can compete. It was expressed that *"in terms of tenure, if you are not part of that team, it is a long time*

before you have an opportunity to get back in, by that stage [sic] your organisation probably has lost the skills, the relevance and the experience to [compete] again.“ This has potentially caused a more defensive approach to partnering, where consortia form in favour of increasing each individuals chance of securing a portion of work; as found for project size. For the companies which tender successfully, the increased length of the project allows more time for people to work together, enhancing relationships and collaboration. As the NOCs are performance-based and their duration varies based on successful delivery, it is in the interest of each member of the consortium to effectively work together. Thus, it can be seen why the project duration is a factor which influences partnerships.

With respect to the project duration, a reoccurring theme identified from the interviews was around value-for-money. Two different perspectives on value-for-money were apparent. First, it was expressed that with a longer project tenure there was a greater opportunity to invest more and recognise savings. Some interviewees stated that shorter-term projects did not have the appropriate length to recognise a return on investment, and as such, were not as economically justifiable. Second, a large proportion of maintenance work was previously tendered on annual or shorter contracts, which meant they could not be well coordinated from a resource management perspective. Both these sentiments use duration as a basis for their justification. Unlike project size, which is inversely proportional to the number of contracts and will change respectively, the duration can be considered independently. It was noted in interviews that the duration of projects was not expected to get longer. The challenge of understanding value and consistently testing the market on price was a factor which was considered to limit duration.

4.5 Contract Arrangements

Previous delivery models often had the consultant working for the client, supervising the contractor. These delivery models had structured and formalised channels of communication. It was expressed during the interviews that contractor's claims may have arisen because they could not work closely with the client. In the opinion of interviewees, this structure attributed to the disconnect between the three parties. It was noted that *“traditional models silo people out, so it [sic] restricts your ability to influence and get best practice around the table.”* With the adoption of more collaborative models, the flow of communication has moved away from hierarchical structures; as depicted in Figure 8. While there are still structured requirements within collaborative contracts, many of the previous communicative barriers have been removed. Interviewees from contracting companies were an advocate for this change, as it was noted as providing more exposure to the client. In relation to the above, three beneficial themes were drawn from the interviews and explain why the contract arrangement was identified as an external factor which influences partnering considerations:

- Improved communication;
- A less adversarial outlook as working together facilitates relationships; and
- Ideas, expectations and knowledge can be more readily shared.

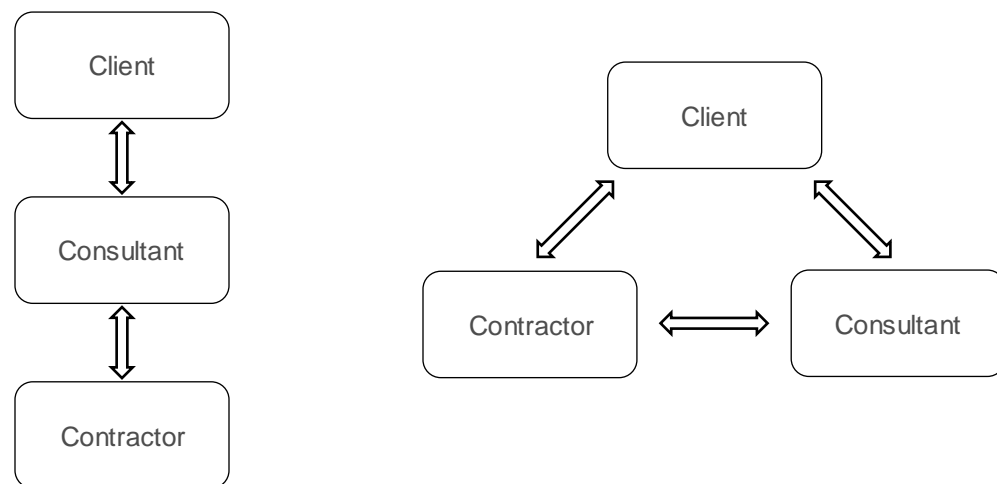


Figure 8: Left, hierarchical communication channels. Right, collaborative communication channels

Furthermore, interviews generated different opinions around the influence of the contractual arrangement on partnering. The closest aligning theme between interviewees was the benefit recognised by utilising the contractor's knowledge and engaging with them, not restricting them to merely building what is prescribed. This was furthered by the opinion of one interviewee, in that working together in a collaborative space allows innovation to develop and a better product to be delivered more efficiently. Both these sentiments are underpinned by having the right people and technical capability. They are linked with the opinions that partnering is fundamentally being driven by the competitive advantage it gives. This latter perspective was identified as an internal influencing factor and is further discussed in the next section.

4.6 Competitive Advantage

With respect to larger projects, interviewees expressed that not everyone has the capability or the capacity to deliver. Furthermore, it was expressed in interviews that clients are pushing for the right skill mix in terms of what is best for the project. By forming requirements to partner, skill sets which would have been considered mutually exclusive through competition can now combine, giving a greater depth to technical capability or physical resources. Interviewees were of a consensus that under such circumstances, partnering considerations were shaped by the competitive advantage these skills could afford consortia. Partnering to obtain competitive advantage was a reoccurring theme throughout the interviews. The rationale for obtaining competitive advantage was identified as an internal factor influencing partnering considerations.

Contractor's interviewed felt that they had previously carried out prescribed physical works without the ability to add value. This mentality was reported to have shifted, in that now to provide a good service, contractors feel that they need to understand, in detail, the service they are providing. This was attributed by interviewees as to why contractors were upskilling in areas such as asset management and pavement design. The development of technical skills in these areas reportedly allowed contractors to be more efficient, as these services are closely linked to their core commercial interests. Some

interviewees discussed that by having more control over the programme, which then affects the productivity of plant, the contractor can better utilise their equipment and recognise a return on their investment. It was expressed that when the contractor is enabled to make decisions around pavement designs and the management of the asset, they take a more holistic view through knowledge of their vertical supply chain. This allows both increased innovation and efficiencies to be recognised, as well as better management of their risks and liabilities, which is also beneficial to the client.

With this development of technical capability, interviews noted that contractors are looking to take a greater proportion of work in-house. The rationale behind this was identified to stem from two potential areas. First, by having in-house capabilities, the understanding and learning opportunities was considered greater than if buying a service from a sub-contractor. Second, and building on the first, it is a means of improving competitive advantage so when competing for future projects the company can match or exceed what competitors are doing. Thus, as companies are partnering because they do not have the skill set desired by the client, there is a heightened incentive to acquire and develop these skills, as opposed to just maintaining or outsourcing them. In contrast, it was expressed that there are services which contractors have no desire to take in-house. Interviewees recognised that there is value in what consultancies offer and outside of a few particular areas relating to a contractor's core competencies, specialist services would continue to be outsourced. Consultants noted that the compartmentalisation into specialist roles was a challenge/risk as it resulted in more specified roles which fewer people could service. The reliance on complementary services offered by consultants has diminished in some areas of partnering.

With respect to a company's capacity, subcontracting out portions of work to smaller companies has always been a key part of contracting. Interviewees noted that one of the biggest shifts from the adoption of more collaborative arrangements, and pressures from the external influences previously identified, was the need/requirement to partner with other mid-to-large size companies or actual competitors. Interviewees identified this as going against the nature of competitive advantage; as it brought other companies into an area, allowing them to establish and develop. Ultimately, the concern expressed in interviewees was that this could lead to the emergence of a potential competitor in future projects.

4.7 Consolidation of Industry

As identified by Chandler (cited in Cook and Hancher, 1990), larger companies will seek out opportunities to expand through vertical integration and product diversification. One way of achieving both aspects is through acquisitions of established companies. Examples of recent acquisitions in the New Zealand engineering industry consist: Opus by WSP, URS by Aecom, Higgins by Fletcher, HEB by Vinci, Hawkins by Downer, MWH by Stantec, Broadspectrum by Ferrovial, and SKM by Jacobs. This pattern of behaviour has led to a consolidation of larger companies within the industry, predominantly influenced by the entrance of international companies.

This form of growth was perceived positively in many instances, with interviewees feeling that it offered benefits to clients and staff. The need for such growth was also commented on with consideration to

the increases in project size. As projects arise with scope or complexity not previously encountered (i.e. Waterview Tunnel or City Rail Link), the question arises, how can capabilities and/or capacity be sourced locally if there is not the experience? Thus, some interviewees noted that both partnerships and international experience is needed to provide the required skills. However, this increase in international presence, and growth of larger companies, will alter the dynamics of competition.

Overseas companies were perceived by some interviewees as likely having had more experience with alliancing and partnering contracts. It was speculated by interviewees that some of the larger companies will continue to expand through acquisitions due to the competitive advantage it offers. For emergent, international companies entering the market, acquisitions are a rational choice as they leverage an existing company's resources and market share, as opposed to having to compete against them. For the remaining companies within the industry, the consolidation following an acquisition is closer aligned to an external influencing factor affecting future partnering decisions. Furthermore, it was noted that there may come a point in which the government needs to intervene and provide regulatory controls or limitations around such growth if it becomes anti-competitive.

As companies get larger it is possible that the divide between the larger dominant companies and the rest of the market will increase. Interview responses agreed that it is difficult for smaller companies (predominantly contractors) to compete in a market where larger companies have increased buying power and ability to capitalise and secure resources. It could be argued that with increasing company size, dependence on partners or sub-contractors could diminish. This could lead to only requiring input from smaller companies in ancillary roles. New Zealand has an abundance of smaller companies which would vie to secure work but due to the fragmented nature of the industry would struggle to regularly outcompete the market and grow.

It was recognised that with the larger highway contracts (i.e. NOCs) many efficiencies and initiatives were developed from learning on these projects; this in turn was seen as something which would further disadvantage smaller companies. Smaller companies would likely struggle to invest in innovation on low value contracts. It was considered that smaller companies would unlikely reach a position to lead such contracts and would solely remain a part of them. Furthermore, an interviewee expressed that many of the smaller companies are employed to provide functional services such as mowing grass or clearing litter; aspects which have a low barrier to entry, and do not result in the development of the company. This reflects the current industry environment in which the largest contracting and consulting companies are operating within New Zealand, with smaller companies unable to develop to compete. Thus, in the civil infrastructure sector it could be expected that there will be a limited emergence of new, large companies. Through the acquisition and growth of larger companies, the middle tier could become hollowed out as growth is stippled. Interviewees noted that this could pose a threat to aspects within the industry and is likely to influence inter-company behaviours.

4.8 Individual Perceptions

It was unanimous from interviews that the adoption of more collaborative models, which facilitate partnering, is beneficial. The industry has slowly progressed away from lowest price conforming models driven by the success of previous collaborative models and peoples experience with them. Traditional models were synonymous with the client, consultant, contractor hierarchical structure previously discussed. A reoccurring theme amongst several interviewees was that industry discussions are shifting focus to what is good for the project, or what is good for the asset in the case of the NOCs. A further example of this rationale was the considerations associated with PPPs *“the whole-of-life asset management which exists within the model means people are making decisions which are not just asset now decisions... [they are] making the best decisions that are optimal both financially and service wise”*. Successes of collaborative delivery models could result in their uptake more readily on subsequent projects creating a reinforcing loop in which perception is gradually altered. Thus, the perception of individuals was identified as an internal factor which influences partnering considerations.

With collaborative contracts, such as the NOCs, a notable change mentioned by interviewees was the client having an increased presence, being more involved in the delivery, and ultimately more invested in the outcome. The shift away from traditional models also saw a change in the relationship contractors and consultants had. It was expressed in interviewees, by both sides of the industry, that they were now part of the same team. Over the short-term, a challenge faced was the perception that consultants had less authority over the contractor or were even beneath the contractor. These comments captured some of the only expressions of ‘adversarialism’ throughout the interviews; an aspect commonly referred to in literature as marring the industry (Ng et al., 2002; Chan et al., 2004). However, interviewees concluded the ideology went against the intent of change. Perceptions were reported to have shifted from feeling the consultant had to be included, to seeing the value of including them.

With the emergence of a stronger emphasis on improving collaboration, it was expressed by some interviewees that the term is becoming misused. Projects are being coined collaborative without the contractual model supporting it. While interviewees generally stated that the NOCs were not collaborative in terms of their contractual model, interviewees recognised that the change NOCs presented was a good thing; and is likely to have improved communication with the client. One respondent noted that with the NOC model *“behaviours have not changed, it is hard for people to adapt to a collaborative framework.”* The antithesis of this was also noted *“if you have got the right people, in most cases, any contract form will work.”* Other interviewees confirmed the latter premise and reiterated that collaboration comes down to the individuals and the people involved. This gives rise to the idea that the challenges associated with collaboration, and its success or failure, is its dependence on the individuals involved.

4.9 Conclusions

Interviews and project records aided in identifying seven factors which influence partnerships. Project location, projects size, project duration and contract arrangement were four external factors, and a result of industry conditions which cannot be influenced by individual companies. The remaining three factors: competitive advantage, consolidation of industry and individual perceptions are all examples of internal factors and are dependent on the actions of individual companies or people.

Increases in project size, location and duration were external factors which influenced partnering by requiring companies to pool resources to satisfy capacity and/or capability requirements. In conjunction with this, decreases in the number of projects was noted as influencing partnerships by driving a mentality in which companies seek to partner to secure a portion of work. Furthermore, partnering allows skill sets which would have been considered mutually exclusive through competition to combine, offering those involved a form of competitive advantage. The extreme case of this is reflected by the acquisitions of companies within the industry. With a shift to more collaborative arrangements, channels for communication were seen as improving, along with knowledge transfer and relationships. This parallels individual perception, where the success of previous collaborative models and the experiences of the people who had worked in them shapes future decisions to partner

Due to their influence on partnering, the factors identified will shape the engineering industry. Factors such as increasing project sizes and durations go in hand with the consolidation of companies. This has led to an industry environment suited to the existing larger companies, where competition is limited to a small pool of suppliers with a national presence. Thus, the benefits of partnering becomes a point of differentiation between larger companies. In addition, partnering becomes a necessity for smaller companies looking to compete. Identification of the factors found to influence partnerships provides a base for which the rationale employed by companies when partnering, and qualities sought after can be more clearly rationalised.

5 Partnering Qualities

While Chapter 4 provided details on influential factors of partnering, this chapter moves to identify the qualities which companies look for in a partner. While companies may possess certain qualities, Cook and Hancher (1990) highlighted the need for differentiation in competitive market places. Based on the assumption that contractors or consultants provide a similar service, this raises the question, what qualities allow a company to stand out from others? No reference to personal relationships was found in the literature review. However, it may have a greater influence on partner selection than literature has previously evidenced. Views may be shaped by individuals and their previous transactions with people, rather than companies themselves; this idea is explored in this chapter.

This first section of this chapter presents interview responses on qualities that companies look for in a partner. The second section examines how companies differentiate themselves from others with respect to these qualities. The remaining sections target specific qualities which were determined from interviews to be of heightened importance.

5.1 Sought After Qualities

An objective of this research is to identify qualities sought after in a partner. Through interviews this was assessed both qualitatively as an underlying theme to several questions, and quantitatively through a table which utilised Likert-based scoring. The Likert table was completed by participants before the interview. Participants were given the chance to add or remove qualities before scoring them. Of the 11-people interviewed, nine returned the table; the distribution of respondents comprised four consultants, three contractors and two third-party industry organisations.

Previous research has predominantly focused on qualitatively defining the importance of traits or critical success factors for partnering. In literature qualities are often referenced in the form of “... *the following attributes of [a] successful partnering relationship [are]: win-win attitude; conflict resolution through problem-solving; freedom of speech and openness...*” (Crowley et al., 1995). This is further evidenced by Table 6, which summarises the partnering elements identified by Humphreys et al. (2003). In these examples of research, no weighting has been given to the identified qualities either individually or with respect to one another. Some qualities repeatedly appear across literature and are seemingly associated with effective partnering. As a means of ascertaining the most important qualities from literature, the number of times it was mentioned throughout different research publications was used as a proxy for its associated level of importance. The list of qualities presented in this research was derived from publications which explicitly listed or identified qualities.

Table 6: Comparison of identified partnering elements: adapted from Humphreys et al. (2003)

AGC (1991)	Sanders and Moore (1992)	Reading Construction Form (1995)	Matthews (1996)
Commitment	Co-operative management team	Free and open communication	Goals and objectives
Continuous evaluation	Co-operation	Continuous evaluation	Trust
Equity	Open communication	Open book costing	Problem resolution
Mutual objectives	Group working	Workshops	Commitment
Timely responsiveness	Common goals	Review of performance	Continuous evaluation
Trust	Problem-solving	Mutual objectives	Group working
Implementation		Problem resolution	Win-win philosophy, shared risk, equity, co-operation

After compiling the survey results, answers were ranked based on the highest average score, and where tied, the smallest standard deviation. Results which had the smallest standard deviation were considered more representative of an accurate score, due to the agreement between participants. Wider variations in responses and subsequently standard deviation were likely to reflect increased subjectivity and divided views. Where scores had both the same average score and standard deviation they were ranked with equal importance. Table 7 compares both the compiled ranking from interviews and the pseudo-ranking derived from literature. The range in Likert scores was found to be comparable, with average scores ranging from 4.7 to 5.9. The compiled Likert scores from interviews are included in Appendix C.

Table 7: Comparison and ranking of qualities between literature and interviews

Qualities	Interview Rank	Literature Rank
Trust	1	1
Teamwork	2	13
Integrity / Respect	3	23
Capability	4	13
Commitment (long term)	5	2
Honesty	6	23
Openness	6	23
Ethics	8	23
Personal Relationships	9	31
Resources (Adequate, Complementary, Willingness to Share)	10	13
Win-Win Attitude	10	3
Communication	12	3
Co-operation	12	7
Past Performance (Track Record)	14	11
Geographic Area	15	-
Reputation	16	13
Understanding	16	13
Leadership	18	23
Availability	19	31
Coordination	20	23
Equality / Fair	21	23
Shared Vision / Goals / Objectives	22	3
Litigation History (Previous Disputes)	23	13
Risk (Shared or Management)	24	9
Safety History	25	13
Problem-solving	26	13
Partnering Experience	27	23
Conflict Resolution	28	7
Innovation	28	9
Management Skills / Support	30	3
Monitoring/Evaluation of the Partnering Process	31	13
Market Entrance Opportunity	32	31
Financial Position	33	11
Company Systems (Financial, H&S, Environmental, Quality)	34	13
Learning Opportunity	35	31
Company Size	36	31

Comparison of the interview results with what was derived from literature shows little correlation. A possible reason for the variation between results is that the qualities considered by interview participants are subjective in nature and depend on the context of the individual and their associated company. Possible sources of such subjectivity could be based on:

- Personal subjectivity: shaped by previous experiences (positive or negative) with partnering;
- Associated company size: association with a smaller company which has a regional footprint and focus and may be reliant on partnering vs. an established, larger, company which has a national footprint and focus, and generally operates independently but utilises partnering when further capability or capacity is required.

Company size was identified as the only trait which scored a negative response. This was considered an interesting discovery as the rationale for partnering was considered to stem from a capability or capacity perspective, in line with resource-based theories presented by Barney (1991) and Vibert (2004). It was preconceived that a company looking to partner as a means of increasing their capacity would have placed a higher impetus on company size. This would suggest that partnering as a means of satisfying capacity constraints is less valued than partnering for capability. This is substantiated by the traits which interviewees scored highest: trust, teamwork, integrity/respect and capability.

The lowest ranked qualities were viewed neutrally and grouped around the midpoint of the scale. These traits were learning opportunities, company systems, financial position, market entrance opportunity, monitoring/evaluation of partnering processes, and management skills/support. The results are considered to correlate well with the size of companies represented in interviews. Interview participants were predominantly from larger, national, companies. These companies are already well established and are, therefore, unlikely to focus on the qualities which ranked lowest when looking to partner. Conversely, smaller companies are more likely to focus on, and benefit from, aspects such as market entrance opportunity or learning opportunities. This view is substantiated by market entrance opportunity being one of the qualities with the greatest variation in scoring.

An apparent trend identified from the results, is that qualities aligning with soft-skills were the most valued e.g. trust, teamwork, integrity/respect, capability, honesty, openness, ethics. This trend is evident throughout the results and shows that lower scores tend to shift toward company focused qualities. Through interviews participants further expanded on the qualities they look for in a partner. Interviewees deemed qualities such as honesty, communication and openness as being some of the most important. These qualities were referred to as general qualities in interviews, in the sense that anyone can possess such aspects. A simple but important distinction was made by one respondent, who noted that general qualities (soft-skills) are always important, but specific skills are always considered and will vary depending on the job. This observation provides clarity around why the soft-skills from Table 7 may have scored so highly. It suggests that if the rationale for partnering is capability-based, specific skills will be a pre-request for any partner and differentiation between companies will be based on their soft-skills. Furthermore, as companies themselves cannot exhibit qualities such as trust,

integrity, honesty, openness, etc. this suggests that perceptions are shaped by individuals and their previous transactions with inter-company personnel, rather than the companies themselves. As such, the soft-skills can be considered synonymous with individual people. Considering the transition in the ranking of qualities with respect to soft-skills and those which are company-focused, it suggests that the qualities sought after are those possessed by individual people rather than the company. This idea is supported by interview responses which noted that partnering was about having the right people.

5.2 Differentiating Qualities

While the qualities previously identified are sought after when partnering, literature acknowledged the need for companies to be able to differentiate themselves from others to successfully compete (Cook and Hancher, 1990; Barney 1991; Eisenhardt & Schoonhoven, 1996). This section looks to identify how companies differentiate themselves from others to attract prospective partners.

From interviews, it emerged that the differentiation of a company had two layers of considerations. First, how does a company differentiate itself from others with respect to prospective partners? Second, how does a prospective partner differentiate themselves to the client? Thus, companies are not only looking for a partner which best aligns with their requirements but also a partner whose differentiation will be perceived favourably by the client; subsequently offering a competitive advantage. From interviews, three key themes were identified as governing differentiating factors: people, track record and capability.

5.2.1 People

At the centre of interview responses were references to people and the relationships that existed between them. While specific aspects varied between interviewees, the underlying themes from responses were similar in nature, and examples supporting people as a key differentiating factor are given below.

- *“It is the people, the senior people within that firm, and our relationships with them.”*
- *“It is the skills and competencies of each individual person within the team.”*
- *“How do we think we will get on with them; that is probably the key.”*
- *“It is always going to be relationships.”*

Further justification was given by interviewees around why people and relationships were one of the main differentiating factors. Interviewees considered the relationships with people a precursor to being able to discuss partnering; only then could subsequent discussions around each company's capability and capacity arise. Substantial weighting was given by interviewees to their previous experiences of working together, particularly had these interactions been successful. The successfulness was generally perceived to have come down to the personal relationships and the amalgamation of teams. Interviewees noted that companies relied on these previous experiences to forecast how they would work together in the future and if it would leverage the best competitive position. Further substantiation

of people being a key differentiating factor was gleaned from an example a respondent provided around the tendering of NOCs; specifically, those in remote locations where the number of competitors is reduced. The interviewee noted that “[local] companies are preferred because they have people on the ground, people that are well known, and have the track record.” Thus, it is the availability of people and their reputation within the area which can provide a point of differentiation for a company.

5.2.2 Track Record

Track record was generally talked about by interviewees with respect to the overarching company but from the previous example, it is also synonymous with people (personal reputation). Over time, companies will build up capability or capacity in particular areas which others do not have. These resources could be tailored to a specific area such as the construction of bespoke infrastructure (e.g. wastewater treatment plants). Thus, for future projects of a similar nature the company would have a direct track record and could differentiate themselves from others. In line with this, Hart (1995) noted that while physical and financial resources may produce a temporary advantage for a company, they often can be readily acquired by competitors. Conversely, a unique path through history (track record) enables companies to obtain valuable resources that cannot be easily acquired by competitors. Track record was also noted by interviewees as being able to be established in a more general sense through means such as:

- Marketing and promotion - the visibility and perception of a company;
- Market saturation - the number and location of a company's offices; skills in particular areas;
- Ease to work with and flexibility - enjoyable previous interactions with other companies.

The last point, ease to work with and flexibility, is more subjective than the first two and relies on the perception of individuals. Ease to work with and flexibility was considered an important part of a company's track record as interviewees noted that for any project there will always be ambiguity and unknowns which will be encountered. A partner who was willing to sit down and recognise change and work through these was considered advantageous.

5.2.3 Capability

From the interviews, it followed that a differentiating factor was the specific technical or construction capabilities that companies may possess. Interviewees noted that consideration of how this expertise coincides with the type of project, and location of the project, is of importance. The considerations around capability may quickly define who the best company to partner with is. In addition to expertise, there is a consideration for the resources that companies can commit to the project. One respondent said “if we were looking at what contractor to work for, we would say who are the senior people... and do we get on with them? [But] you might get to the point of saying, well they are not big enough for the opportunity.”

For contracting companies, interviewees noted that a point of differentiation has arisen around their professional service elements, their technology and stakeholder management. Thus, there is increasing consideration given to how companies manage the softer aspects of a project. With regards to the professional service elements, it was mentioned that contractors are increasingly developing in areas such as asset and network management. This allows initiatives relating to capital works expenditure and predicting asset conditions to be developed. Both of which provide clients with cost certainty and serve as a point of differentiation for the company; a point of attraction for partners.

Through the examination of the main differentiating qualities, it is apparent that the factors closely relate to each other. Figure 9 depicts the link between each of the differentiating qualities and the optimal position in which a company or individual would be sought after.

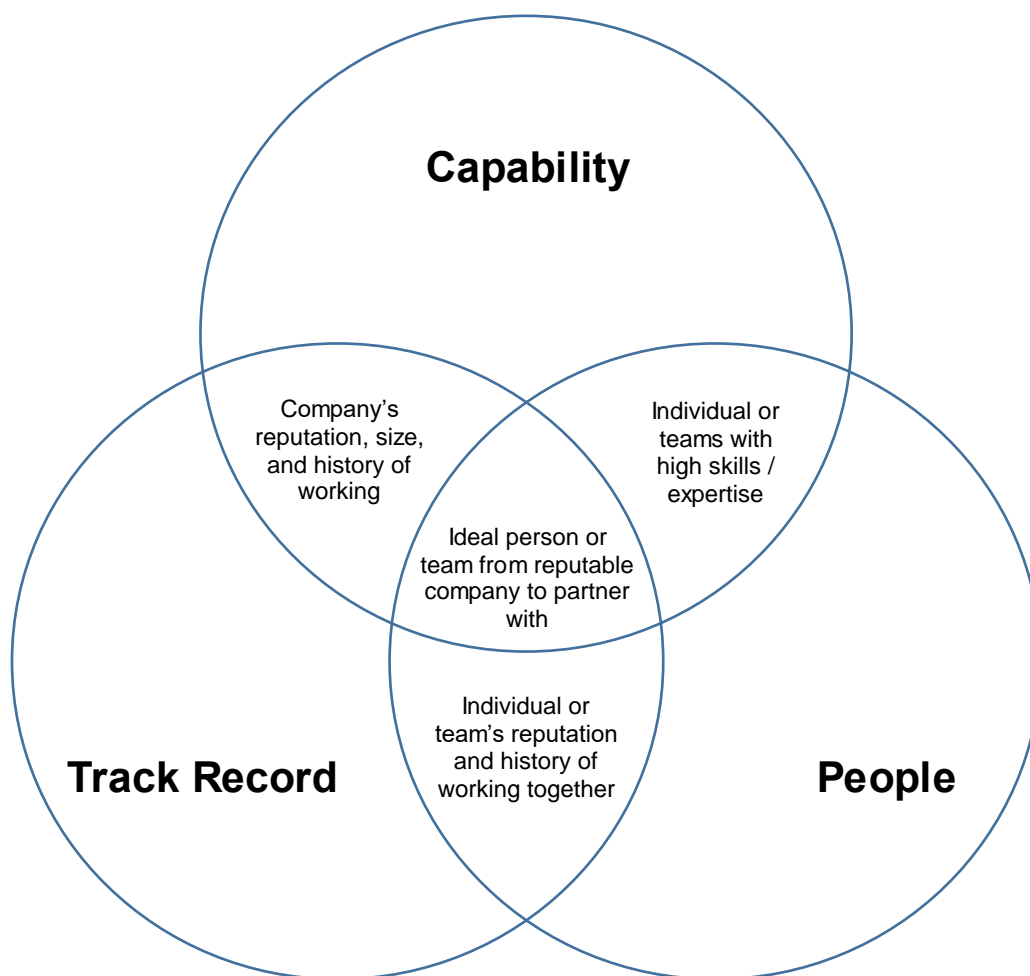


Figure 9: Interaction of differentiating qualities

5.2.4 Changes to Qualities

As previously noted, one of the more recent changes to a series of large contracts was the introduction of the NOCs circa 2014 (NZ Transport Agency, 2014). This change in procurement model was discussed with interviewees to understand how this would have influenced their partnering considerations and the qualities they sought. The first nine NOCs were tendered under PQM before the

NZ Transport Agency were forced to intervene; this external influence is anticipated to have altered partnering considerations. Initially, for the first contract, competition was balanced from an attribute and price point of view but in the subsequent tenders the price component was continually driven down. From the project records analysed in this research, the accepted price decreased to a point in which it tended to range 10% to 30% below the contract estimate. Interviewees speculated that other companies used the price component as a means of securing work, as the desire to win work grew with each unsuccessful tender. As a result of this seemingly unsustainable process, the procurement model was changed to Purchaser Nominated Price (PNP).

With respect to the changes from PQM to PNP interview responses generally centred around the following themes:

- Considerations which drove partner selection did not vary with changes in procurement model.
- Companies people looked to partner with were based on attributes and the right blend of skills.
- Selection was based on the pre-existing relationship with that partner and the feasibility of working together long-term.
- Partner selection was based around obtaining the best chance of winning.

There were conflicting views expressed in interviews around the focus on price when tendering under PQM. One sides view was that to decrease price, at times, the consultants' input was minimised. Some contractors noted that they would take on more generalist roles, which could be completed by either company. It was expressed that there was always a place for consultants, but this was increasingly being kept for specialist roles. The opposing view noted that the input of consultants was always valued and considerations for cost did not change with the procurement model.

For some companies, interviewees noted that the perception did change between the two models and shifted to a more relationship-based approach in the later PNPs. The rationale around this was that when the tender evaluation process changed as did the approach to relationships to reflect this. This highlights a difference between companies which are proactively focussing on long-term relational-based partnerships and those which reactively consider a more relational-based approach, secondarily to a commercial one. This sentiment was reflected in a comment which provided an insight into such rationale *"if the relationship was good but the fee would be lower we would go with that; there might be scope to build the relationship and build the fee. Whereas before [if the relationship was not as good] while we might win, we would either have a static fee or reducing fee"*.

5.3 Trust

Both literature and interview participants identified trust as the most important quality in partnering. The meaning of trust was found to vary between people based on their perception. One interviewee aptly summarised trust as *"being comfortable with each other that we will deliver, and what we will deliver... trust is knowing people and how they are going to react and respond; being honest and open."* Due to

the subjective nature of trust and its overall importance in partnering, interviews further explored how it was developed or, conversely, lost.

5.3.1 *Establishing Trust*

Trust was noted by interviewees as one of the most important qualities in a partner. What is not apparent is whether trust is formed on the basis of a company's reputation or on feats of individual people and their personal relationships with others. The hypothesis coming into the interviews was that trust would be established through personal relationships. When questioned, interviewees generally stated that trust was established between people at a personal level (7 in favour) rather than at a company level through such means as reputation (2 in favour). While respondents tended to settle on one of the two different perspectives a large proportion mentioned that both came into play.

Two lines of thought emerged as a means of justifying interviewees decisions:

1. Trust is established at a personal level between people, paving the way for inter-company relationships in which the reputation of the company is then based.
2. The culture and values (reputation) of the company will subsequently attract likeminded people, providing reassurance to those which place their trust in the company.

The two lines of thought share a common theme, albeit indirectly, of trusting people. Based on interview comments such as "*[the] personal level establishes it [trust] for a company level*" it is apparent that trust must initially be developed between individual people, at a personal level. If trust is subsequently established with a person in a position of leadership, and influence, it can extend to the wider company. This focus on key staff and the people in positions of leadership was reiterated across several interview responses. Trust between senior management was said to drive company-to-company relationships. It is worth noting the delineation between inter-company relationships and inter-company trust; and the former not implying the latter. Based on the above premise that company-to-company trust cannot precede personal trust; if relationship between individuals exist, trust can be established from this.

Trust was identified by interviewees as developing over time; in line with findings of Bresnen and Marshall (2000) and Khalfan et al. (2007). For larger, long-term projects trust was unanimously considered important. For smaller, shorter-term projects the supply of services was not considered to warrant the same level of trust. Trust was considered to be something which was incrementally built up at a personal level. Two overarching themes which emerged from interviews for developing trust were:

1. Successfully working together – this was defined by interview participants as:
 - *Working together through tough times and/or critical incidents (e.g. earthquake or flood responses, challenging projects)*
 - *Getting to know each other personally*

- *Acting in the best interest of the team*
- *Winning projects*

2. Reliability and delivering what was promised – this was defined by interview participants as:

- *Meeting expectations of performance*
- *Tangible evidence of outcomes*
- *Consistently delivering*

The above items identified in interviews were all examples of actions which would develop trust. When combined, the aspects which interviewees identified can be seen to relate closely to the phases throughout a project, this is depicted in Figure 10.



Figure 10: Cycle for developing trust.

5.3.2 *New Partnerships*

The prior section on trust assumes that trust has already been established. There are instances when this premise does not hold true, such as companies partnering with each other for the first time. In this instance, companies will not have establishing trust. However, respondents stated that trust is inherent in human nature and will initially be present to some degree. Interviewees expressed that the lack of trust in a partnership could be influenced or overcome by:

- Secondary experiences with the company – while the specific people may not be known, the previous experiences of others working with the company resulted in a successful outcome.
- The reputation of the company – the previous track record and perception of the company could be relied on in lieu of not having worked together.

- The opportunity and the risks – if the new company offered a fresh or beneficial approach or if the partnership could deliver a result which outweighs the initial lack of trust, people would be more willing to take on risk.
- Safeguarding measures – companies may build in a contingency or keep new partners at an arm's length to protect their interests.

5.3.3 Loss of Trust

Over time it was expressed that things will not always go right, and in instances when things do go wrong, trust can potentially be lost. Interviewees generally shared the sentiment that the most detrimental influence on trust was the opposite of things which establish trust; not delivering on expectations; losing projects; serving self-interest over the team; being found to be dishonest, etc. People noted that trust was lost, or questioned by people, when expectations were not met on multiple occasions. An important consideration identified by interviewees was that trust could be lost much quicker than it is established. However, providing the accumulation of trust remained greater than the resultant loss, the partnership (at a personal or company level) would continue. Conversely, if the loss of trust was greater than that previously accrued, the relationship could be undermined and impeded going forward. Based on responses, the continuum which trust is considered to vary over is depicted in Figure 11; with each vertical increment indicating (un)successful completion of the cycle of trust shown in Figure 10; and horizontal increments indicating the lapse in time between projects and companies working together. It was expressed by interviewees that the loss of trust could be mitigated through the right people reconciling. This was considered an important aspect for ensuring that trust remains intact at a company level and highlights the importance of individuals within partnering arrangements.

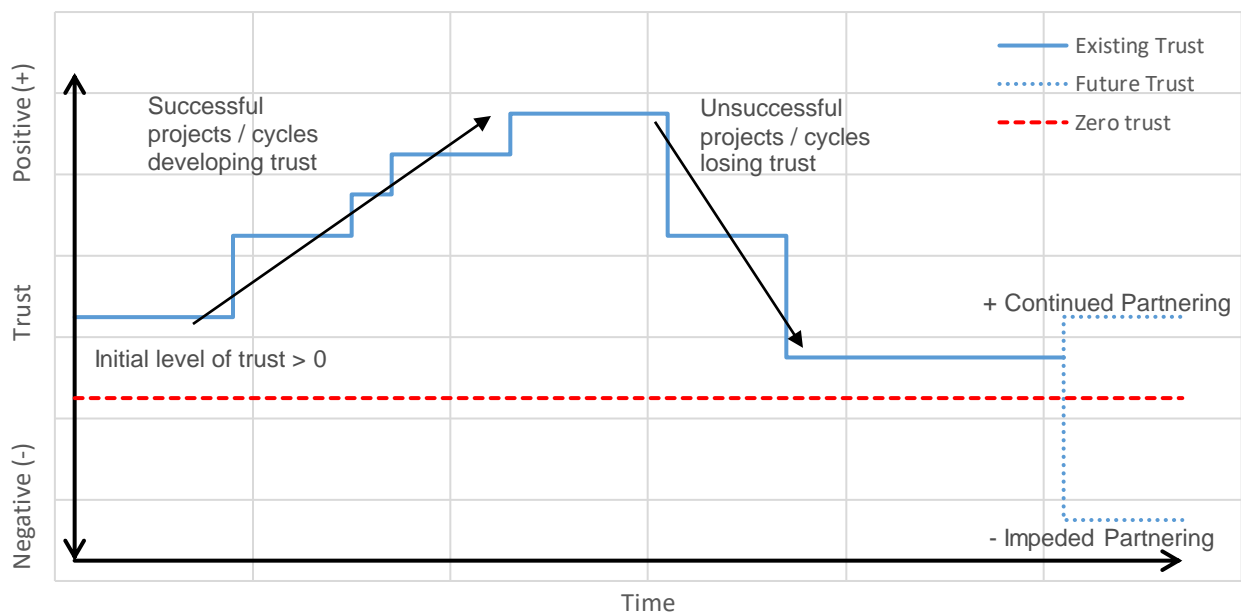


Figure 11: Trust continuum

5.4 Geographic Area

Geographic area was added to the Likert-table of partnering qualities as a means of testing the theory that it is an important consideration in partner selection, as references to geographic location were not found in the literature. Geographic location ranked 15th out of 36 with respect to the other qualities. During interviews there appeared to be a stronger emphasis on its importance, with each person noting it influenced their selection of partners. Synthesis of the interview transcripts identified the three main considerations, and by extension sought after qualities, pertaining to geographical area as: local presence, remote areas and people.

Due to increasing urbanisation (Stats NZ, 2019) a large proportion of the road network and associated infrastructure remains disbursed across the wider country despite the centralisation of people. This gives rise to geographically remote areas such as Northland, Gisborne, Southland and the West Coast. Companies themselves are generally based around the main centres (as discussed in Chapter 4) and may not be well represented in all remote areas due to insufficient business to warrant their establishment. Subsequently, this alters the level of competition in these areas. Remote locations were identified by interviewees as being more difficult to resource; one of the main challenges faced by companies was getting the right people in these areas. Relocations were also identified a challenge due to their associated costs. It was summarised by an interviewee that *“if your partner does not have the right people in that area or cannot bring them in, then obviously your chances of winning are not that good.”* As a solution, companies often seek to resource projects externally through travel. External resourcing offers the advantage of ensuring that people with the right capability are present onsite. The importance of this was reiterated by another interviewee who noted that for winning a job peoples personal attributes were key, they quoted: *“the only thing that differentiates you is fundamentally the people or the way in which you are proposing to deliver the solution, so the methodology. Those are the two real key pivots.”*

Respondents agreed that local presence was important, companies who were established in the area were perceived more favourably; particularly where projects are considered resource intensive. While many of the larger companies have a national footprint and are of a size that can respond and mobilise to almost any project, smaller companies are often constrained to a more regional focus. A benefit of this was identified by interviewees who noted that, as a result, smaller companies can be heavily integrated with the community. This was a positive characteristic which factored into the partnering decisions where the strategy was to secure key, local, resources. Conversely, when competing against these types of companies it was noted that *“some contracts are actually quite tricky to win because the guys have good local relationships with their respective client ...”* Local presence was not just considered with respect to the project but was also extended to where the client was based. Interviewees noted that companies want to be as close to the client as possible, to gain exposure and to better influence decisions. It was noted that as long as there is a local presence, and people who could represent the company, the entire team did not need to reside there.

When companies did not have a local presence themselves, a reoccurring theme was around people, and who they would prefer to partner with. Interviewees expressed that they would rather partner with someone they know and have a relationship with (i.e. an ex-staff member); providing their associated company had a suitable reputation and track record with the client. Through the interviews it was noted that *“if you have the relationship that will govern it, particularly if you go to somewhere like the West Coast, [sic] Gisborne or [sic] Northland [somewhere remote].”* As a result, interviewees noted that companies would partner with different companies within different areas.

From the above it is apparent that people, remote locations and local presence are all intertwined and underpin considerations around partnering in geographic areas. Figure 12 depicts the link between each of these qualities and the optimal position in which a company or individual would be sought after.

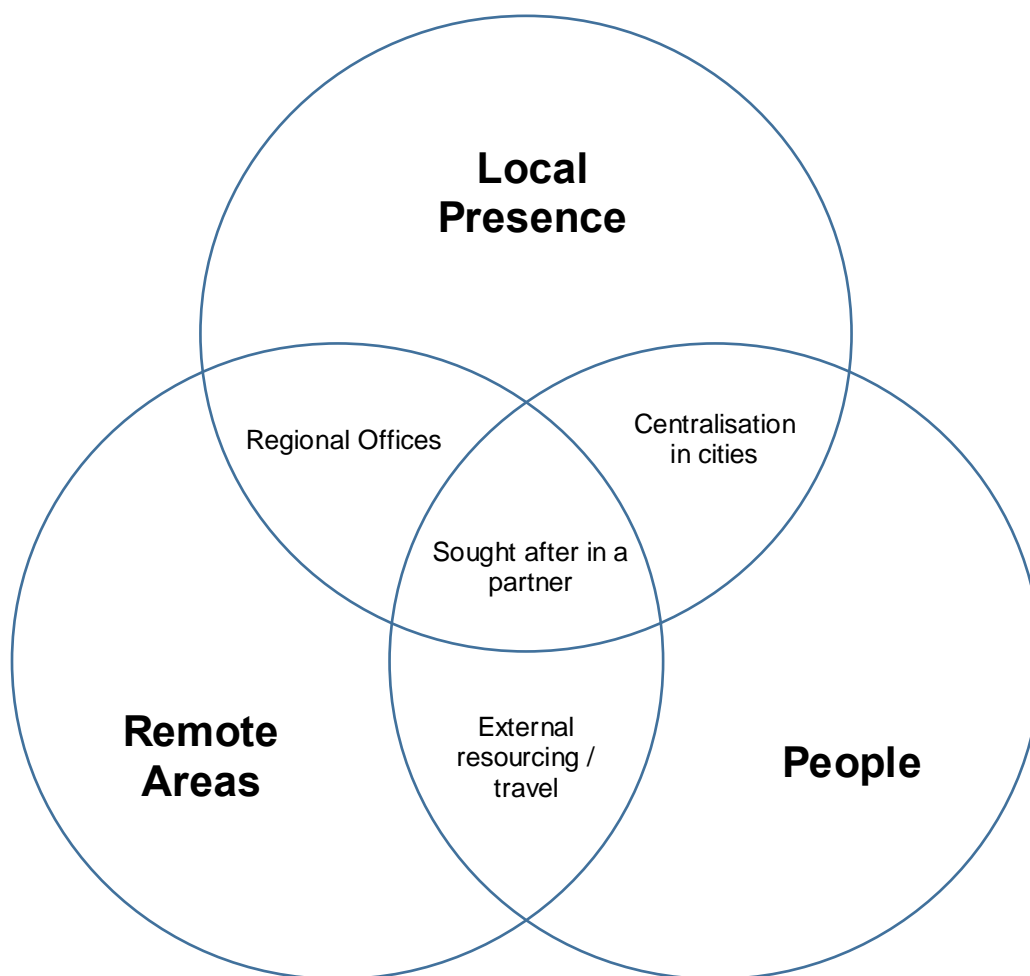


Figure 12: Interaction of geographic location considerations

5.5 Personal Relationships

Considering the interview responses around qualities, trust and geographic area, an apparent theme was the importance of individual people and personal relationships. Respondents were asked if their views of partnering were based on the company and its reputation or the individuals which they had previously worked with.

It was repeatedly expressed throughout the interviews that the New Zealand construction sector is small; with a heavy emphasis on the size of personal networks and low degree of separation between people across the industry. Resultingly, interviewees expressed that personal reputation had a large influence on relationships. In support of this view is the requirement for nominating key people in bids and with this the fact that companies are assessed on the quality of their personnel. As noted previously, people associated trust with individuals rather than companies. In line with this, interviewees opinions on prospective partners defaulted toward individuals they had previously worked with and the relationships that had been formed. It was expressed in an interview that people will align themselves with others they are familiar with; *“you would certainly lean in that direction as opposed to a company you might think has the same level of technical capability, but you do not know them or have that relationship.”* With respect to personal relationships, it was agreed by interviewees that decisions which affected partnerships, such as choosing not to go with some, were business related and should not be taken personally. Despite this it was noted that people may often feel a sense of disdain but as long as motives were governed by best-for-business and/or project mentalities, the relationship would be maintained.

While the importance of personal relationships is evident between main contractors and consultants, likely due to the dependence of the partnership, it was questioned if this extended to smaller suppliers. Interview responses from consultants tended to recognise smaller companies in a more transnational sense; they needed to be confident they would deliver but it was the resources and performance which governed the decision to work with them. Interview responses from contractors noted that at a regional level there were strong relationships; these relationships had often been in place for quite some time and were considered a key factor. For generalist work, interviewees agreed that contractors are likely to have closer, more personal relationships with smaller companies due to the increased likelihood of previous partnerships. One interviewee noted *“the main thing looking at sub-contractors, I think again it comes down to that track record of have they worked with us before [and do] we know they are committed to doing the right thing...”*. This response differs from the compiled list of qualities interviewees supplied. Past performance (track record) scored 14th out of 36, yet when discussed during interviews in the context of smaller companies a greater impetus was placed on its importance. This suggests that the way in which smaller companies are selected tends to be based more on their capability and resources rather than their soft-skills. Regardless of the reason for their selection, as with all partnerships, interviewees expressed a desire for sustainable, long-term relationships.

5.6 Conclusions

The qualities which companies look for in partners was assessed through interviews and Likert scoring of those identified in literature. The following conclusions have been drawn based on the results:

- The highest scoring qualities were considered to represent soft-skills more evident in individuals than companies; trust, teamwork, integrity/respect and capability. Conversely, the lowest scoring qualities were closer related to organisational characteristics; company size, learning opportunities, company systems and financial position.

- Of the qualities considered, differentiation of a company was attributed to their people, track record and capabilities; with the ideal partner having the right balance of all three.
- Trust was identified as the most important quality in a partner. Trust is initially developed between individual people, at a personal level. Specifically, trust was established by successfully working together and delivering what was promised.
- For individuals or companies which had not worked together previously, trust could initially be established through secondary experiences with the company, the reputation of the company and the opportunity the partnership presented.
- Geographic area was a quality in which the importance increased when partnering in remote areas, geographically separated from the centralisation of companies. As a quality in a partner, geographic area was dependent on people, local presence of offices, and the project location.
- Views on prospective partners was found to default toward individuals that people had previously worked with and the personal relationships that had formed.

For the qualities sought after in a prospective partner, individual people were a reoccurring theme and the centre of their genesis. Thus, these qualities are considered to align closer with those possessed by individual people, rather than companies themselves.

6 Partnering Rationale

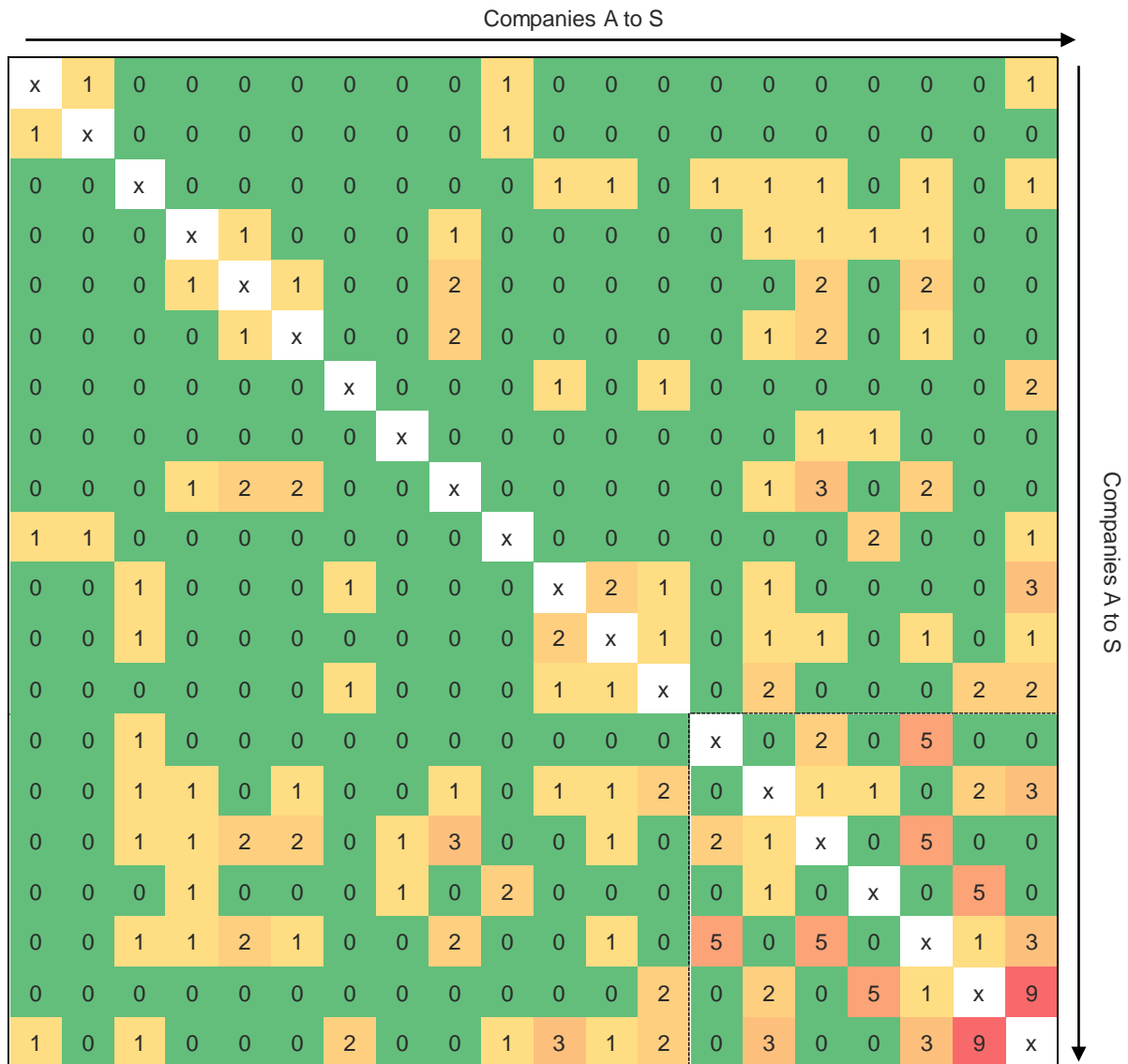
As a company's rationale cannot be captured by a single sentiment, this chapter examines the considerations which shape rationale to understand how these affect decisions to partner. Numerous reasons for variability in partnerships were inferred from literature, suggesting that different rationale for partnering are pursued by different companies. Cook & Hancher (1990), Eriksson et al. (2008) and McGeorge & Zou (2013) all identified barriers to partnering and disadvantages associated with it. Thus, rationale will not only be based on the benefits derived from partnering but also the avoidance of negative implications.

The first section of this chapter utilises project records and interview responses to examine variability in partnerships. Parallels are drawn with existing organisational theories to further understanding a company's rationale and its alignment with literature. The second section examines the reasons partnerships are formed and the subsequent sections each explore a different consideration that shapes a company's decision to partner, which in combination provide an overview for assessing rationale. This section finishes with the identification of partnering implications, including the risk of collusion.

6.1 Variability in Partnering

Variability in partnering has not been examined in literature, nor has its presence been clearly explained in the context of the New Zealand engineering industry. Based on the project records obtained for this research, individual companies in consortium were identified and the presence of variability was confirmed by comparing previous partnering arrangements. Table 8 shows the number of times companies repeatedly partnered across projects with a value greater than \$40M. Companies identities have been withheld, however, it still provides clear indication of the general trends between companies who partner more frequently.

Table 8: Heat map of previous partnering arrangements in New Zealand



6.1.1 Network Perspective

Table 8 shows limited correlation and, therefore, variability, with the exception of the cluster of companies who have partnered repeatedly, as evidenced by the bottom right hand corner (bounded by the dotted line). Thus, while variability is evident it can be suggested that there are sets of companies which work together in favour of longer-term relationships. While most companies have not repeatedly partnered, there is a large spread over the number of companies they have partnered with. This aligns closely to the organisational theory on 'Network Perspective'. This perspective builds on the notion that economic actions are influenced by the social context in which they are embedded, and actions can be influenced by the position of people in social networks (Gulati, 1998). This definition regarding people is interchangeable with companies.

Vibert (2004) wrote that the formation of a network is based around the following concepts:

- Centrality *used to measure which company can reach the largest number of others.*

- Connectivity *the extent to which companies can be reached by others.*
- Network size *the total number of companies who are reached by a company.*
- Clique *whether some companies interact with only one another.*
- Equivalence *whether some companies interact with the same set of others.*
- Block *whether some sets of companies interact only with some other sets.*

With respect to the above concepts, the alignment of Network Perspectives with the New Zealand engineering industry is apparent. For instance, a large contractor could be considered to have 'centrality' through their interactions with both smaller sub-contractors and consultants. The 'network size' is likely to be proportional to the size of the contractor, where larger contractors will have a greater reach than smaller regional companies. 'Cliques', 'equivalence' and 'blocks' all relate to the variability in partnering arrangements and the preference of a company to diversify and work with multiple companies or form a more consistent and ongoing relationship with a single entity. Gulati, Nohria and Zaheer (cited in Vibert, 2004) suggest that networks provide a company with access to information, resources, markets and technologies; with advantages from learning, scale, economies of scope. This allows companies to achieve strategic objectives such as sharing risk and outsourcing organisational functions. Thus, highlighting the benefits of variable partnering arrangements.

6.1.2 Game Theory

Vibert (2004) reported that in many cases, the best way to remain flexible and protect long-term interests is to work with previous competitors. By doing this, the dynamics of the relationships often change to something more collaborative. Thus, it is not always apparent when it is in a company's best interest to compete or co-operate. The theoretical perspective of Game Theory addresses this concern.

Game Theory is the analysis of strategies for dealing with competitive situations where the outcome of a participant's choice depends on the actions of other participants. Two typical game theories are 'Dominant Strategy Equilibrium' and 'Nash Equilibrium'. 'Dominant Strategy Equilibrium' refers to a strategy if, regardless of what any other company does, the strategy earns the company a larger payoff than any other. 'Nash Equilibrium' is a set of strategies, one for each company, such that neither has incentive to individually change their action. A parallel to this ideology and means of exploring variability can be made with reference to Nash Equilibrium. If the market place was a series of projects which were the same time after time, then the partnership would always be the same providing successful outcomes were delivered. This example introduces several limitations:

- The market place is not a series of the same reoccurring projects;
- The frequency of projects varies;
- Companies do not always successfully deliver; and

- Companies may look to build their team, to avoid the need to partner as often.

As projects change the dynamics of partnerships will vary to reflect these requirements. In addition to the above points, as previously identified, two other influencing factors will comprise:

- The change in the location of the project;
- The change in personnel delivering the project.

These latter points were substantiated by interview comments such as *“it is people and how they work together ...”*; *“It all comes down to the people available and where it is located”*; and *“again it’s around the geographic location and strengths at the time.”* In line with the above factors, variability occurs based on companies seeking further project opportunities. This was identified as being dependent on the current market conditions and a company’s forward workload at a point in time. These considerations could also be shaped by future projects which companies seek to preposition with each other. It was inferred from interviews that an agreement to partner on one project could be a prerequisite for another.

The introduction of variability therefore shifts the decision to partner toward Dominant Strategy Equilibrium. An important implication of applying Game Theory is that companies are conscious that their actions affect each other. Furthermore, in terms of modelling interactions with Game Theory what constitutes a rational choice is never allowed to depend on what happened previously, Tsoukas and Knudsen (cited in Vibert, 2004) noted that in defining rational behaviour, only future states matter. The history between partners, which would impact decisions, is neglected as each new decision is assumed to be taken de novo; this is a major limitation of Game Theory and its application to the engineering industry. Game Theory goes somewhat in explaining interviewees rationale, such as *“if it is just a short-term project with a hard ending (i.e. nothing else afterwards), that could be a reason you would not want to partner with a particular organisation on that particular opportunity”*.

6.1.3 Discussion

Interviewees expressed that much of the drive for partnering was around competitive advantage and securing the best chance of success. Variable partnering arrangements were identified as a means of achieving this. Companies will have strengths in different regional areas and across different project types; likewise, they will possess weaknesses. Interview responses noted that these strengths and weaknesses were closely related to the skills of individual people. Interviewees noted that if a person or team has not performed well in the past, this will impair future relationships. Either the partnership will not occur again, or the nature of the relationship will change, along with the roles and responsibilities; increases or decreases a company’s scope of services as necessary.

Interviewees also suggested that variability may be due to resource imbalances, where the number of contractors and consultants do not align. Such imbalances can arise organically through companies having sufficient market share and not competing or choosing to partner with someone else only to provide minor ancillary services. Imbalances can also arise inorganically through offensive partnerships

which seek to remove resources, preventing others from utilising them. Interviewees identified that partnerships also vary due to acquisitions of companies. Partnerships were reported to have been disbanded because a competitor acquired a company, removing a previously available resource.

Interviewees expressed their preferences for variability over a spectrum of arrangements; from looking to partner primarily with a single company to maximising their spread across the industry. Each form of partnering arrangement had associated advantages and disadvantages. Partnering with a single company was expressed favourable by interviewees for the following reasons:

- It establishes a form of brand consistency, companies/clients know exactly what they will get.
- The previous experience of working together results in better efficiencies, cost effectiveness and an improved chance of success for future opportunities;
- Less variables when benchmarking performance across projects; clearer to understand why things are being (un)successful in different places; and
- Easier to share intellectual property across projects and lesser concerns of losing it.

Interviewees identified that variable partnering arrangements, with multiple companies, were favourable due to:

- Client diversification removes reliance on one company and reduces the risk if something went wrong with the partnership;
- Client diversification increases the opportunity to work with/for others; and
- Variability ensures fresh approaches and helps promote innovation.

Ultimately interviewees tended to favour singular, long-term relationships. However, the theoretical advantages may not be as evident in practice, as seen by companies adopting more variable partnerships based on maximising their chance of success. Furthermore, client diversification was noted as being a more sustainable strategy. While Game Theory can explain rational decisions its limitation of neglecting the history between partners is not representative of industry or client perceptions. Network Perspective Theory on the other hand aligns extremely well with interviewees opinions of the industry and assists in explaining variability within the engineering industry. While variable partnering arrangements look to maximise the chance of success for each project (short-term perspective), they require strong long-term relationships that allow companies to work together intermittently and be accepted as a partner should the opportunity arise.

6.2 Decision to Partner

Interviewees noted that the formation of the project team is an iterative process. A relational process where key people within the company, be it contractor-consultant, contractor-contractor or consultant-consultant, begin to have conversations. Initial conversations were noted to be around the opportunity, and what the arrangement would like. If a company were negotiating from a position of power, the conversation could shift toward what could be offered by the other company. From interviews, the formation of project teams was identified as an activity which takes place in advance of the project coming to market; especially for projects such as the NOCs, due to their defined length and repetitive occurrence. Interviewees noted that initial conversations could occur anywhere between 6 months to several years in advance. Thus, the industry has a general understanding of who will be partnering with who before the project comes to market.

To test concepts on partnering presented by Eisenhardt and Schoonhoven (1996) and Li et al. (2000), interviewees were asked to discuss the circumstances in which they would partner and subsequently when they would look to compete alone. The synthesis of interview results revealed the main reasons for partnering were:

- The competitive advantage it offers;
- To access resources not present within the company;
- To spread risk;
- Most commercially efficient way to deliver; and
- Contractually required by the client/delivery model.

With respect to competitive advantage, it was recognised by interviewees that people are a key part of scoring in attribute-based tenders and winning a project could be inhibited by not having the right people. Therefore, companies look for a partner to complement their own people. Interviewees acknowledged that other companies have skilled people and partnerships were formed by putting the best team forward; this was captured in one response which stated *“there is only a finite number of people who can do it and so [sic] with partnering [sic] you try and align yourself with the best opportunity and the best partner to be able to win the work.”* To achieve this, interviewees noted that both individuals and companies needed to be able to work together.

It was noted that resources were dependent on both current and future workloads. Identification of areas which are under or overutilised was important to interviewees as it dictated what proportion of the work could be retained or outsourced. Interviewees noted that it is inefficient for companies to ‘gear up’ for peaks in workload. Taking on additional resources in the forms of people or machinery to service peak demands would tie up substantial capital, and once the peak had passed there would be a surplus. Instead, companies look to maintain the right strategic level of resource, as summarised by one

respondent *“we want to make sure we have enough resource [sic], enough critical mass in the activities you want to be in, to be able to do it cost effectively and with continuity.”*

In the context of going alone rather than partnering, interviewees stated that companies would require a complete set of resources to successfully compete in non-price attributes. In addition to this, these skills would need to be available in the required geographical location, ideally with some prepositioning with the client. Aligning with the previous notion of gearing for peak workloads, if a company perceived that the resources required to go alone could be utilised in subsequent contracts, and would strengthen the overall business, it favoured their retention and development over outsourcing to a partner.

It was noted in interviews that projects which could be delivered without the need for another company were perceived as being simpler in terms of leadership, management and completing the work. Secondly to this, being the sole participant was identified as yielding a greater financial return. Participants noted that as projects get lower in value their risk tends to reduce. In such instances, it was perceived as a more appropriate opportunity to sole source. Thus, the decision to partner is always considered on a case-by-case basis depending on the scope of the project. Axelrod and Parkhe (cited in Eisenhardt and Schoonhoven, 1996) stated that people co-operate when the payoff exceeds that of proceeding alone. When the payoff shifts to favour solo endeavours, people will disengage from co-operative activities. In contrast to this, only one interview response was based around proceeding alone if it was felt a better fee could be obtained with the current level of resources held by the company.

Consideration of the delivery model in partnering is something commonly overlooked in literature. While the models' requirements can force partnering it does still provide companies with the choice on who they partner with. An example of forced partnering is the 'Healthy Market' key performance indicator used in the NOCs, which stipulate a certain percentage of work needs to be outsourced (NZ Transport Agency, 2017c). As a result, companies would be penalised if they decided to proceed alone. Interviewees noted that even if delivery models shifted back towards lowest price, while this would provide more of an opportunity for sole sourcing, companies would still choose to partner; as there are aspects which other companies can better deliver. It was expressed by several interviewees that companies will always require and/or choose to partner, and changes to delivery models would only alter the number of viable companies they would consider partnering with; this emphasises the variable partnering perspective previously discussed.

Ultimately, the above reasons suggest that the primary benefit of partnering is its role as an enabler for winning projects. Thus, it was emphasised that partners need to complement each other, which due to the natural difference between contracting and consulting services is readily achieved. Interviewees noted that the complimentary nature needs to extend not just to each company's core services but also to the people involved. Where partnerships arise between companies providing the same service (i.e. consultant-consultant or contractor-contractor) the rationale and perspectives around partnering become increasingly complex.

6.3 Partnering with a Similar Company

With respect to partnering with a company that provides a similar service, interviewees' responses varied based on their affiliation with either consulting or contracting companies. Consultants generally expressed that there was less concern for who they partnered with and enjoyed the experience of working alongside quality people. Perspectives from interviewees associated with contracting companies were more reserved. The two main reasons partnering with a similar company was not preferable were:

1. The requirements for complementary skill sets; partnering with similar companies would generally result in a duplication of resources. Where resources were identified as being different (i.e. quarries or specialist capabilities) it was considered unlikely these would be readily shared as they offered a form of competitive advantage.
2. The size of the contractor; there were no concerns expressed when partnering with a small regional contractor as they were considered unlikely to grow and compete for future work. However, if the contractor was a moderately sized company with a more national presence, reservations around partnering arose. It was noted by an interviewee that there could be the risk of moderately sized companies acquiring further skills, track record, and other necessary components to compete in future projects.

The above reasons were not exclusive. While partnering may not always be desired between similar contracting companies, interviewees did note that they would co-operate to recognise commercial efficiencies, such as joint ventures in assets or the occasional shared use of resources. With the latter point, it was also noted by interviewees that the desire to win a project generally overcame and/or outweighed most concerns.

A point raised by several interviewees was the change in mentality throughout the different stages of the project. Interviewees noted that during the tender period there were processes and information which companies deemed important to winning, and as such, sought to minimise others understanding. This rationale was attributed to the uncertainty around if the project would progress further or if the submission would be unsuccessful. If the bid was successful, the partnership was locked in for the projects duration; with this security relaxing perceptions. However, interviewees stated that companies are likely to remain careful with respect to keeping information separate from one another, as there is always a consideration for the next project in which competition may again be realised and require the former proponents to compete. Thus, companies look to ensure that IP is retained during the relationship. Interviewees noted that a way in which this is achieved was the expectation or requirement that separate people from within a company represent their interests. This provides reassurances that staff are not also aligned with their competition and places trust in the individuals not to divulge sensitive information. This sentiment reflects that organisational relationships are underpinned by those of individuals.

6.4 Short vs. Long-Term Considerations

With views based around partnering as a means of winning a project, it appears partnering tends to favour a shorter-term consideration. In contrast, longer-term considerations can be considered as repetitive, ongoing, relationships across multiple projects. It is apparent that a balance needs to be struck between partnering as a means of securing a project and managing existing relationships.

When asked if decisions around partnering were based on short or long-term considerations respondents favoured the prospect of long-term relationships. Interviewees expressed that there was a desire to develop relationships that were more than just transactional in nature. The relationships sought would add value to the contract; have a long-term reach; and yield access to future opportunities. It was acknowledged by interviewees that such considerations could change with time. Short-term considerations were found to be governed by factors such as:

- A short-term win to better position the company by gaining track record for the next project;
- A short-term win to gain experience with a new client.

It was noted that while the short-term view may be to win the project, there are underlying long-term considerations. Long-term considerations were found to be governed by a company's strategy and factors such as:

- Achieving the desired market share;
- Expanding into new areas;
- Prepositioning for future work.

An interesting observation through the interviews was that most people expressed a desire for long-term partnerships or felt that long-term partnerships should be more sought after. A typical response was *"we are not picking partners to win only, we are picking them to be with us for the full term and we would hope that we would align for the next tender"*. Despite this, interviewees acknowledged that projects often had a short-term focus with an emphasis on opportunity. Interviewees opinion on favouring short-term partnerships, despite seeing long-term as the goal, aligns closely with the previous findings of Bygballe et al. (2010). Only one pair of companies within the industry was identified as continually partnering. Interviewees noted that the two companies were known for having an almost exclusive relationship when it came to bidding major contracts. This was recognised by interviewees as being potentially advantageous for bids as it demonstrated to the client a clear and measurable track record, as opposed to a set of companies that have never, or not as regularly, worked together. Furthermore, it was recognised that a continual relationship can form brand recognition in which a pair of companies become synonymous with delivery expectations and/or project types. Interviews expressed that *"it is a lot easier if it is one supplier because you get to know them, [and] you get to know their management structure."*

Long-term relationships, in particular with a single partner, were noted as being an effective way of ensuring IP was not leaked. For company's which readily partner with others, a downside was noted, in that each transaction provides an opportunity for others to gain insight into sensitive areas. Some interviewees noted that long-term projects also provide security around reoccurring revenue. This allows companies to invest more in relationships, training, and/or plant and equipment and pay it back over a sufficient period of time. This helps achieve betterment of the companies involved, may improve performance each year, and ultimately provide the client with a better outcome. In contrast, short-term projects were identified as tending to create problems around the feasibility and mentality of investing in such matters as they do not accommodate a return on investment.

Long-term considerations were encapsulated by the rationale associated with partnering on NOCs. Interviewees noted that these projects can provide access to regions and subsequently visibility and presence. This visibility and presence facilitates growth in other commercial areas, with a wider range of clients. The local presence allows people to connect and build relationships which otherwise would have been intangible. For companies who already have a national presence and are not focused on regional growth, the focus around maintaining market share shifted to preferential contracts. For contractors this was further noted as being in locations with access to vertical supply chain elements (i.e. bitumen and quarries). Thus, the underlying rationale of both smaller regional and larger national contractors aligns with the growth trends identified by Chandler (cited in Cook and Hancher, 1990).

6.5 Regional vs. National Considerations

In regard to companies basing decisions around regional or national considerations there was a typical trend in responses; smaller companies focused on regional areas, while larger companies focused on both regional and national.

Interviewees expressed that regional considerations were focused around identifying if the company, and/or prospective partner, had the right people and/or resources in an area. If it was recognised that they did, this could provide a form of competitive advantage for securing the opportunity. However, due to the remoteness of some areas, companies may not be operating in the region. Subsequently, a typical dilemma identified by interviewees was choosing to partner with someone who there is a good relationship with but are not operating in the region, versus partnering with someone in the region where the relationship is not as good or is non-existing.

National considerations were expressed as being based more around developing long-term relationships. Thus, if a company misses a partnering opportunity in a regional area, it does not impact on their operations and relations in other areas. As a result, companies with a national footprint and considerations will regularly find themselves partnering with a particular company in one area, only to find themselves tendering in competition in another.

6.6 Defensive vs. Offensive Mentalities

To tests theories identified in literature, interviewees were asked if partnering was perceived as an offensive or defensive strategy, and if there was a consideration for how their partnerships influenced the broader network of companies. Clarke-Hill, Li, & Davies (2003), Wood & Ellis (2005) and Dyer & Singh (1998) all found that partnering and co-operation between companies offers benefits to both parties, as it permits the pooling of their complementary strengths; maximises the effectiveness of each participants resources and establishes on-going business relationships and learning; and combines resources to provide an advantage over competing companies who are unable or unwilling to do so. Offensive partnerships were defined as those in which companies develop competitive advantage and strengthen their position by diminishing another competitors market share (Clarke-Hill et al., 2003). Defensive partnerships were those seeking to construct entry barriers that are intended to secure positions and stabilise companies standing in the industry. Alternatively, companies that have a weak position in the market may form defensive partnerships in order to guard themselves against dominant companies (Clarke-Hill et al., 2003). Through responses it was evident that the theoretical outlook offered by literature faced a limitation; the Commerce Act 1986 stipulates that arrangements substantially lessening competition are prohibited. The formation of any partnership will, therefore, need to demonstrate that the result achieved through partnering is offering a better outcome as opposed to reducing competition.

Respondents' opinions touched on both offensive and defensive outlooks. Where defensive outlooks were expressed, these were around partnering to reduce risk and ensure a portion of the work is secured. Offensive outlooks were primarily noted by interviewees as selecting a partner which would provide the best competitive position e.g. *"we look at who is best for it and try and go with them. We go after individual people and particular areas of expertise."* If this was to reduce the level of competition a company faced it was considered an ancillary, but favourable benefit. Another outlook was expressed by interviewees which serves as an amalgamation of both perspectives. By not competing for a project it allowed another company the opportunity to secure market share and experience. Furthermore, not undertaking the project could impede qualities such as track record should the company decide to compete for similar projects in the future (defensive mentality). By participating and securing the work, even if undesired, it would prevent competing companies from participating (offensive mentality).

6.7 Embracing Collaboration

The extent to which people and companies embraced partnering was found to vary across interviews. Positive experiences were associated with strong relationships in which partnering was invested in. The most synonymous experiences with this were projects which developed their own entity, separate from any individual company. Examples of such entities were the Stronger Christchurch Infrastructure Rebuild Team (SCIRT) or the North Canterbury Transport Infrastructure Recovery (NCTIR). These projects promoted collaborative environments by concentrating the workforce in a project office, in which communication and trust is more easily facilitated by working together. The importance of a common goal was iterated across interviews, in which people felt they had a united reason, or purpose,

to work together. This could be facilitated by extending the notion of separate entities to the individual personnel, such that ties to parental companies are indistinguishable. The client was another entity identified as needing to be included in the partnership. In projects where the client is also part of the team, it was noted that people often fail to appreciate how much influence they have over the culture; if the client behaves adversely it can undermine the contract and/or the philosophy of the team.

Despite achieving a separate entity, it was discussed that the NOCs failed to reach the same depth and commitment in terms of their partnering relationships. Reasons for this were attributed to:

- Difficulty in keeping the same levels of commitment and investment going over a longer period;
- People and personalities changing over the course of the contract;
- Difficulty in building enthusiasm around repetitive work which is the same each year

At a national level, interviewees believed that management understood the importance of partnering and its objective. This was not considered to translate to personnel on the ground and was a perceived challenge for ensuring its success. Facilitated partnering sessions were one tool identified to try and shift perceptions around this. Overall people were considered to be maturing around the prospect of collaboratively working together. Initially, some interviewees noted that a master-servant type mentality prevailed, but with time this changed as people better understood the value of working as a team and getting people aligned and motivated.

6.8 Partnering Equality

The behaviours and rationale of the partnering arrangement may be predetermined based on the implications from the commercial model. This was tested with interview participants to see whether they perceived partnering arrangements as fair with consideration to the distribution of risk and financials between the client, contractor and consultants.

The majority of responses identified arrangements as being fair. Arrangements were perceived as having to be fair otherwise they would not work or would only work once. If an arrangement was not considered fair and equitable companies would not partake. It was noted that each party needs to get what they want, and often the arrangement is based on the balance of risk and reward. Despite the general perceptions which surround partnering it should be acknowledged that partnering also recognises self-interest. Both companies need to benefit from it, otherwise it would not be pursued.

Several responses differed from the majorities perspective. Opposing views noted that whether the relationship is fair or not will depend on the proponents and if one party can dominate the other; in line with Humphreys et al. (2003). The fairness or power imbalance of the relationship will depend on the project and can come from one party having a stronger position or skill set. Such instances may lead to price tensions being pushed on to the subordinate partner, to drive cost down and compete for the project. The intention for such acts, however, are not born of menace; one interviewee said *“it is a balance...[sic] overall you are wanting to be fair because you want to have these things sustainable*

and you want to be partnering with the people in 3 or 4 years' time, so you try and keep them fair but you also have the reality of winning the job on the day."

Few references were made to a detrimental extension of the above, where master-servant behaviours still exist between the client and supplier or between contractors and consultants. These were perceived as being unfair relationships in which the risk sits with the main supplier. Interview participants from larger companies noted they were mindful not push the risk down further on to sub-contractors. It was noted that many of these companies were not tendering in their own right as they do not want to take on the risk. This perspective was based around the company being large enough to take on and manage the risk. However, interviewees expressed that in some instances collaboration may not arise because the risk allocation is all with one party. *"Where risk share becomes untenable, collaboration just falls through the floor. It comes back to the competitiveness, if there is the right balance in the commercial aspects then collaboration can flourish."*

6.9 Partnering Disadvantages

While this research has predominantly focused on the reasons for partnering and the benefits recognised through its implementation, partnering will not always be appropriate. The implications of partnering were explored with interviewees to determine potential disadvantages or instances in which it should be avoided. Points raised by interviewees which coincided with literature comprised:

- An opportunity cost associated with partnering is that when companies outsource work they will not develop their own capabilities; this can result in a resource dependency. If the partnership dissolves it could lead to an absence of the necessary resources in subsequent projects compared to if the company had chosen to develop and/or build on an area initially. This was identified by Cook & Hancher (1990) and McGeorge & Zou (2013).
- Companies and/or people may not get on. The wrong partner could be chosen, and the relationship may be different, with expectations not matching what was expected. Companies might not be aligned with each other's ideals or vision, and strategies may even be conflicting. This was identified by Cook & Hancher (1990) and Dyer & Singh (1998); and
- The loss of intellectual property, which was identified by McGeorge & Zou (2013).

Further aspects discussed with interviewees, which were not previously identified in the reviewed literature comprised:

- For companies focusing on long-term perspectives, it may be difficult accepting there are better options in areas where one partner may not have satisfactory levels of skills or resources. Thus, a disadvantage is incurred when choosing to maintain the relationship over seeking the best opportunity to win the project.

- With increased contract sizes and durations, if companies tied to consortia unsuccessfully tender for a project it can be a long time before they can next compete; this effect was identified as being exacerbated for smaller regional companies and companies in remote locations;
- If something goes wrong during the project, each company is reputationally tied to the other and will be associated with the others failure(s);
- With partnerships removing some of the barriers between companies there is a risk of staff being taken; generally key staff due to the nature of seeking to form the best project team; and
- Enabling competitors to expand in size or into areas previously uncontested. Subsequently, increasing the level of competition for future projects.

Despite the disadvantages associated with partnering, from comments across interviews, means of minimising, or mitigating, disadvantages were also identified. The process by which this could be achieved is summarised as follows. The decision to partner should be carefully weighed and based around strong personal relationships and trust. Companies should be careful when choosing a partner, especially where it is recognised there is not alignment; including with the client. Cultural behaviours, ideology around working collaboratively, core values and behaviours should drive the way the partnership is run, as opposed to commercial agreements. The partnership should take the time to go through a facilitated process connecting the team.

6.10 Risk of Collusion

As found in literature, there have been numerous international cases of collusion in the construction industry (Doree, 2004; Wilson, 2015; Pitre & Houle, 2016; and Chaster 2018). Previous investigations into competition law in the New Zealand construction sector identified that industry personnel were generally of the opinion that anti-competitive behaviour does not occur due to a highly competitive market (Commerce Commission, 2017). This fits with responses from interviews for this research. It was noted by interviewees that the danger around collusion is more likely to stem from people not understanding what it is, and unwittingly participating. However, interviewees acknowledged that ignorance is no defence and stated that companies provide training, so people understand the boundaries, and where they cannot step over. The main themes interviewees noted for inhibiting collusion comprised:

- Competitiveness and the number of companies;
- Damage to reputation;
- Ethics; and
- Legislation.

The themes identified by interviewees align with that of the previous Commerce Commission (2017) study. While most interviewees were aware of legislation in general, albeit not specifically referring to the Commerce Act 1986 or Commerce (Cartels and Other Matters) Amendment Act 2017, this was not the main consideration for preventing collusion. In extension to legislation, legal repercussions were referred to as an aspect which would prevent collusion at a personal level.

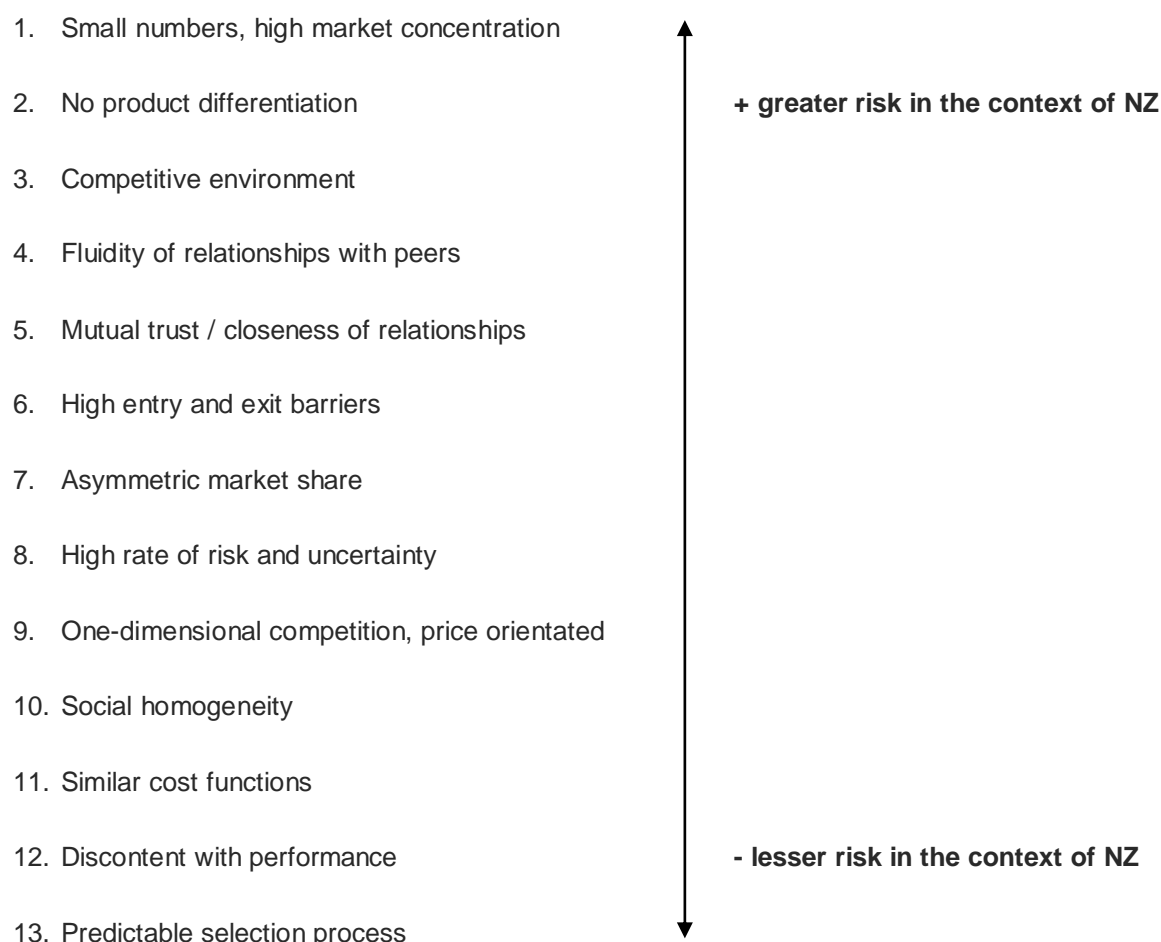
Ethics was referred to periodically through the interviews. Consultants tended to make the point that, many of them were Chartered Professional Engineers and had declared to uphold a code of ethics. Several interviewees from consultancies made the observation that contractors were under no such obligation. With regard to ethics the point was made that if ethics was the primary means of preventing collusion people would not have raised concerns over legislation or legal repercussions; as these could only be enforced if ethical practice was first neglected.

The most commonly referenced aspect which prevents collusion was identified as the reputational damage; at both a company level and to a lesser degree the personal level. Reputational damage was characterised as the negative publicity and associated damages to a company's brand. The size of companies was identified by interviewees as having an impact on the extent of reputational damage. As companies become larger the associated damages from being tainted by collusion would have further reaching effects, including internationally. Implications of reputational damages given by interviewees were: exclusion from future projects, a negated ability to win work, the potential loss of contracts already held, and for larger company's damage to share prices. Thus, it was concluded that companies would not tolerate collusion at a personal level. Similarly, people were not willing to put themselves at personal risk for the benefit of the company.

Another opinion on what prevented collusion was 'the desire to win'. This idea is spurred by the competitive nature of companies and people. Collusion was considered unlikely due to the pride associated with winning on merits alone. Reference to low tender prices was also made as a justification that collusion was not occurring; as previously identified, the PQM submissions for the NOCs saw unsustainable price submissions. However, as noted by Van Waarden (as cited in Doree, 2004) if this behaviour was left to continue companies may have sought to collude in order to survive.

Responses collated from interviews noted that the number of companies in the industry was perceived as mitigating the likelihood of collusion. With many of the larger companies competing in more collaborative arrangements (i.e. alliances tendered with a focus on quality as opposed to cost), collusive practices were perceived as being restricted due to the increased levels of visibility in relationships. Considering this in conjunction with the notion of being a small industry was noted as making it difficult to hide secrets, albeit contradictory to theories about collusion and oligopoly presented by Doree (2004).

Combining the works of Doree (2004) and the Commerce Commission (2017). The following were identified as stimulus or stabilising factors for collusion:



While New Zealand exhibits many of the stimulus for collusion identified by Doree (2004) and the Commerce Commission (2017), in contrast to literature and cases from the Netherlands, South Africa and Canada, public-procurement appears to be more consciously safeguarded. The increased adoption of collaborative procurement models has stymied the predictability of selection processes and emphasis on lowest price. The NZ Transport Agency's public-procurement methods already support emerging companies to participate in large infrastructure projects, which was a recommendation of Wilson (2015). Along with sanctions for participating in collusive or anti-competitive behaviour, New Zealand can be considered to have adopted (or already have implemented) many of the international recommendations identified by Wilson (2015) and Pitre & Houle (2016). Thus, interviewees tended to agree that through the recent changes to delivery model's, competition had been retained or even seen to increase.

While the number of suppliers may have decreased, it resulted in a more sustainable supply base; the same larger companies are expected to compete nationally across most projects. This is in line with the Commerce Act 1986 requirement that contracts do not lessen competition. However, these implementations fail to address the current state of the industry around aspects such as the small number of large companies that are active in all or many construction markets; significant vertical integration in the industry; the lack of product differentiation; limited construction companies meeting

the NZ Transport Agency's prequalification requirements to work on large construction projects; geographically constrained areas; high barriers to entry; the formation of joint ventures by construction companies to tender for the larger construction projects; and the strong personal relationships (as identified in the review of international collusion cases presented by Doree (2004), Wilson (2015), Pitre & Houle (2016) and Chaster (2018)).

6.11 Conclusions

When partnering, the rationale adopted by each company will differ based on their own specific underlying considerations; this introduces variability into partnering arrangements. The primary cause of variability in partnerships stems from partnering for the best chance of success. Variability can also be attributed to an imbalance in complementary partners and promotion of innovation. Variability closely relates with the organisational theory of 'Network Perspective', where companies seek diversification and recognise benefits from being in positions of centrality.

As part of maximising the likelihood of winning a project, rationale was further shaped by considerations such as, short and long-term; regional and national; defensive and offensive mentalities; and partnering with similar companies. With the permutation that maximises competitive advantage being the desired outcome. While variable, short-term considerations based on winning projects dominate the industry, there is a strong desire for long-term, sustainable relationships. Long-term partnerships provide brand consistency and allow efficiencies to be recognised from having previously worked together. Short and long-term considerations are not mutually exclusive. To support variable partnering arrangements, companies require strong, long-term relationships; particularly between individuals.

Rationale for partnering is further affected by influences such as the level of collaboration or equality of the partnership. Formation of a separate entity, to that of the individual companies involved, was found to improve collaborative mentalities in partnerships. However, partnerships need to be fair to successfully form. Despite the perception of collaboration which surrounds partnering, it also recognises self-interest; both companies need to benefit, otherwise it would not be pursued. Implications of partnering include dependency issues and whether companies should retain or outsource parts of the project. Furthermore, disadvantages associated with partnering were identified to understand its limitations.

As a result of industry consolidation, the number of large suppliers has decreased. This results in a more sustainable supply base; with the same set of larger companies expected to compete nationally across most projects. However, as larger projects are being delivered through more collaborative arrangements, in which companies partner to form consortium, this may facilitate collusion. Factors identified overseas, that stimulate collusion, were found to align with the current state of the New Zealand construction industry. While such factors can promote collusive or anti-competitive behaviours, it was perceived within the industry that such practices do not exist. The threat of such practices was considered more likely to stem from people not understanding the limitations or boundaries prescribed by law. Collusion was deterred primarily by procurement practices already adopted by the NZ Transport

Agency and the damage a company's reputation would incur; to a lesser degree personal ethics, competitiveness and legislation were also considered to prevent collusion.

7 Research Conclusions

This research sought to investigate how companies balance competitive and collaborative interactions, and how increasing collaboration and partnering does not transgress towards collusive behaviours. This chapter concludes the research, with the first section summarising the main conclusions with respect to each of the associated objectives. The conclusions are followed by research limitations and recommendations for future research.

7.1 Summary of Conclusions

This research began by examining the influence of internal and/or external factors on partnerships (Chapter 4). Seven factors were found to influence partnerships. Project location, size and duration, and contract arrangement were four external factors, that were the result of industry conditions which cannot be influenced by individual companies. The three remaining factors: competitive advantage, consolidation of industry and individual perceptions are internal factors and are dependent on the actions of individual companies or people.

Changes to external factors such as increases in project size and duration will influence the shift towards more collaborative arrangements, and in turn, have driven the consolidation of companies within the industry. This has led to an industry environment suited to the existing larger companies, where competition is limited to a small pool of suppliers with a national presence. Thus, the benefits of partnering becomes a point of differentiation between larger companies. In addition, partnering becomes a necessity for smaller companies looking to compete.

Identification of the seven factors found to influence partnerships provided a base for what qualities are sought after in a partner (Chapter 5). The most sought-after qualities were soft-skills more evident in individuals than companies; trust, teamwork, integrity/respect and capability. Conversely, qualities regarded least were aligned closer with organisational characteristics; company size, learning opportunities, company systems and financial position. The importance of geographic presence as a quality was found to increase when partnering in remote areas; aligning with the external factor, project location. Considerations for the geographic area were dependent on people, local presence of offices, and the project location.

Of the qualities considered, differentiation of a company was attributed to their people, track record and capabilities; with the ideal partner having the right balance of all three. Possessing qualities that offer competitive advantage, and a point of difference, aids companies in attracting prospective partners. Opinions of prospective partners defaulted toward experiences with individuals that people had previously worked with and the personal relationships that had formed. In line with this, trust was determined to be initially developed between individual people, at a personal level. It was hypothesised that personal relationships have a greater influence on partner selection than evidenced in literature. This has been substantiated in the interviews. For the qualities sought after in a partner, individual people were a reoccurring theme and the centre of their genesis. Thus, the qualities sought after in a partner and the basis for which qualities are perceived are considered to align closer with individual

people than companies themselves. The significance of qualities possessed by individual people and how these were perceived by others was not expected. The impetus placed on individual people and their importance in facilitating relationships is an important outcome of this research.

The final chapter of the research built on the previous two and explored the rationale and implications of forming partnerships, as well as how the balance of competition is sustained, and what mechanisms ensure collusion is avoided (Chapter 6).

As a company's rationale cannot be captured by a single sentiment, the considerations which shape decisions have been explored to understand how they affect partnering. The rationale for partnering adopted by each company differs based on their own specific underlying considerations; this introduces variability into partnering arrangements. As part of maximising the likelihood of winning a project, rationale was further shaped by decisions around: short and long-term; regional and national; defensive and offensive mentalities; and partnering with similar companies. With the permutation which maximised competitive advantage being the desired outcome.

While variable, short-term considerations based on winning projects dominate the industry, there is a strong desire for long-term, sustainable relationships. Long-term partnerships provide brand consistency and allow efficiencies to be recognised from having previously worked together. Literature has predominantly focused on either project partnering or strategic partnering as mutually exclusive concepts. However, the amalgamation of these and associated complexities are not well evidenced. An important finding of this research was that short and long-term considerations are not mutually exclusive. To support variable partnering arrangements, companies require strong, long-term relationships; particularly between individuals. Furthermore, despite the perception of collaboration which surrounds partnering, it also recognises self-interest; both companies must benefit otherwise it would not be pursued.

Implications of partnering include dependency issues and whether companies should retain or outsource parts of the project. Furthermore, disadvantages associated with partnering were identified to understand its limitations. As a result of consolidation, the number of large suppliers has decreased. This results in a more sustainable supply base; with the same set of larger companies expected to compete nationally across most projects. However, as larger projects are being delivered through more collaborative arrangements, in which companies partner to form a consortium, this may facilitate collusion. Factors identified overseas, that stimulate collusion, were found to align with the current state of the New Zealand construction industry. While such factors can promote collusive or anti-competitive behaviours, it was opined within the industry that such practices do not exist. The threat of such practices was considered more likely to stem from people not understanding the limitations or boundaries prescribed by law. Collusion was deterred primarily by procurement practices already adopted by the NZ Transport Agency and the damage a company's reputation would incur; to a lesser degree personal ethics, competitiveness and legislation were also considered to prevent collusion.

7.2 Research Limitations

The New Zealand Institute of Economic Research (NZIER, 2013) conducted a study on market competition in physical works contracts using project records from the NZ Transport Agency between 1995 and 2010. The project records contained some 12,900 contracts which differs to the 3,462 available for this research. Despite the discrepancy in results the projects records used in this research are more likely to reflect collaborative arrangements due their increased adoption with time. Furthermore, this research used the project records to focus on collaborative arrangements and partnering; something not considered in the NZIER study.

The analysis of project records from the NZ Transport Agency's online database aided the identification of factors influencing partnering. However, limitations of the project records and analysis comprise:

- Data around the initial and final years (e.g. 2001, 2002, 2016 and 2017) may not be as holistic as other years; as the recording of projects was either being implemented or projects that were underway had yet to be entered (the latter years). Trends identified from the data are subject to change with time, however, this is not considered to impede the applicability of this research.
- The data has been cleared of erroneous entries, as reasonably practicable; this included the identification of incorrect accepted prices, contract estimates and duplicated projects. All of which would lead to overestimations of metrics if not removed.
- The value of projects refereed to within this research does not take into consideration contract variations being excluded or increased contract costs being over and above the original contract prices. The effect of these omissions is likely to result in an underestimation of the values.
- Analysis pertaining to the project value did not consider historical cost adjustments and/or inflation over the years. Their incorporation would alter the magnitude of the trends identified.

This research examined civil engineering companies operating within the New Zealand roading sector, specifically companies that led NOCs. This in conjunction with interviews of 'experts', resulted in a relatively small sample size; but comparable to other studies such as Ng et al. (2002). Despite the sample size, purposive and quota sampling respectively ensured that individuals which had unique or important perspectives were present, and that key groups were sufficiently represented in the sample. Additionally, as interviews were used in conjunction with quantitative information a large number of participants was not considered necessary. Limitations of a small sample size were further reduced by basing inclusion of participants around involvement in NOCs (as opposed to other procurement models) so a greater proportion of the population could be sampled.

Opinions of interviewees do not necessarily reflect that of their associated company and are shaped from personal experiences with partnering. Furthermore, interviewees may not be prepared to fully disclose their view on certain aspects, and what is disclosed may be misinterpreted by the researcher (Alshenqeeti, 2014). Qu and Dumay (2011) suggest that interview transcripts are not a direct reflection

of reality, but information that must be subjectively evaluated. This is substantiated by Alshenqeeti (2014), who proposes that a disadvantage of interviewing is the potential for subconscious bias; from both interviewee and interviewer. The scope for this research was limited to both project records and interview participants from New Zealand, although literature from overseas was used as a basis for the research.

7.3 Future Research

This research has examined partnering and how companies balance competitive and collaborative interactions. Furthermore, stemming from an absence in literature, the rationale for forming partnerships and the qualities which companies seek in partners have been uncovered through interviews. This research is exploratory in nature and focuses on the discovery and generation of theory, the following areas are suggested for future research:

- Extending the research to encapsulate the wider civil engineering industry, in both horizontal and vertical infrastructure, would provide further understanding of how niches within the industry partner, and how collaborative arrangements can be more effectively implemented.
- Further research into the dynamics of competition and its variability could be undertaken. This should consider a Lotka-Volterra type model, as Predator-Prey characteristics could be considered analogous to competition in the construction industry. Such research would offer a greater insight into the sustainability of competition and the survival of competing companies.
- Further research could be undertaken to investigate, and isolate, sources of competitive advantage and quantify their benefit.
- Further research could involve closer examination of human behaviours and relationships, and how this manifests in the context of partnerships within the engineering industry.

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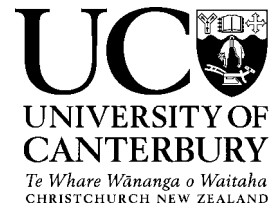
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Appendix A – Information Sheet, Consent Form and Interview Questions

Department: College of Engineering

Email: bradley.peterson@pg.canterbury.ac.nz

26/02/2018



Competition, Collaboration and Collusion; Balancing Company Interaction within the New Zealand Engineering Industry

Information Sheet for Participants

My name is Brad Peterson and I am the lead researcher for this project. The purpose of the research is to identify how competition, collaboration and collusion are balanced within the New Zealand engineering industry. The research will seek to determine what characteristics companies look for when seeking to 'partner' on a project, and explore the benefits and implications of forming collaborative arrangements.

The project is being carried out as a requirement for The Degree of Master of Engineering (Construction Management) by Brad Peterson under the supervision of Eric Scheepbouwer and Brian Guo, who can be contacted at eric.scheepbouwer@canterbury.ac.nz and brian.guo@canterbury.ac.nz. They will be pleased to discuss any concerns you may have about participation in the project.

If you choose to take part in this study, your involvement in this project will be as a participant in a semi-structured interview. The interview is expected to take up to 60 minutes. Interviews, in person or over skype, will have the audio recorded. Interviews are recorded for the purpose of producing transcripts, to allow the researcher to re-visit interviews at a later date, and to identify themes and/or keywords through coding.

Participation is voluntary and you have the right to withdraw at any stage without penalty. You may ask for your raw data to be returned to you or destroyed at any point. If you withdraw, I will remove information relating to you. However, once analysis of raw data starts in August 2018, it will become increasingly difficult to remove the influence of your data on the results.

The results of the project may be published, but you may be assured of the complete confidentiality of data gathered in this investigation: your identity, and that of your company's, will not be made public. To ensure anonymity and confidentiality, data will be separated into identifying data (e.g., consent forms, coding forms), and de-identified data (e.g., coded data, de-identified transcripts). This will be done by assigning participants a code on the consent form, and using that code on any data, transcripts, etc. The identifying data, de-identified data, and coding key will be kept separate in locked and secure facilities and/or in password protected electronic form. The researcher (Brad Peterson) and Supervisory team (Eric Scheepbouwer and Brian Guo) will be the sole persons with access to the data. Data collected for the study will be destroyed after five years. A thesis is a public document and will be available through the UC Library.

Please indicate to the researcher on the consent form if you would like to receive a copy of the summary of results of the project.

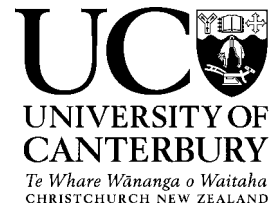
This project has been reviewed and approved by the University of Canterbury Human Ethics Committee, and participants should address any complaints to The Chair, Human Ethics Committee, University of Canterbury, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz).

If you agree to participate in the study, you are asked to complete the consent form and return it in person on the day of the interview or by email to bradley.peterson@pg.canterbury.ac.nz

Department: College of Engineering

Email: bradley.peterson@pg.canterbury.ac.nz

26/02/2018



Competition, Collaboration and Collusion; Balancing Company Interaction within the New Zealand Engineering Industry

Consent Form for Participants

- ☐ I understand that I can contact the researcher Brad Peterson (bradley.peterson@pg.canterbury.ac.nz) or supervisor Eric Scheepbouwer (eric.scheepbouwer@canterbury.ac.nz) for further information. If I have any complaints, I can contact the Chair of the University of Canterbury Human Ethics Committee, Private Bag 4800, Christchurch (human-ethics@canterbury.ac.nz)
- ☐ I have been given a full explanation of this project and have had the opportunity to ask questions.
- ☐ I understand what is required of me if I agree to take part in the research.
- ☐ I understand that participation is voluntary and I may withdraw at any time without penalty. Withdrawal of participation will also include the withdrawal of any information I have provided should this remain practically achievable.
- ☐ I understand that any information or opinions I provide will be kept confidential to the researcher and research supervisor and that any published or reported results will not identify the participants or their company. I understand that a thesis is a public document and will be available through the UC Library.
- ☐ I understand that following transcribing of the interview, I (the participant) will have the opportunity to read over the transcript and amend or edit it as I consider necessary.
- ☐ I understand that all data collected for the study will be kept in locked and secure facilities and/or in password protected electronic form and will be destroyed after five years.
- ☐ I would like a summary of the results of the project.
- ☐ By signing below, I agree to participate in this research project.

Name:

Signed:

Date:

Email address (*for report of findings, if applicable*):

Please return in person on the day of the interview or by email to bradley.peterson@pg.canterbury.ac.nz

Competition, Collaboration and Collusion; Balancing Company Interaction within the New Zealand Engineering Industry

Interview Questions for Participants

1. What is your job title and responsibilities?
2. How long have you been with the company?
3. How long have you been working in the industry?
4. There have been quite a few changes to procurement types implemented by the NZ Transport Agency. There's been a shift toward increasingly collaborative models (i.e. from traditional to hybrid and PSMC; and lately NOCs and alliances). What is your opinion around these changes in collaboration?
 - a. What do you believe is driving these changes? Please explain.
 - Changes to project sizes.
 - Changes to project duration.
 - Changes to the number of projects.
 - Changes to project complexity.
 - A greater distribution of work across companies
 - *Other reason – please provide.*
 - b. What effect do these changes have on the way you operate?
 - c. What effect do you think these changes will have on the way other companies operate?
 - d. What effects do you think these changes have on competition?

- i. Will this be beneficial to the client, participating companies or no one?
 - ii. What are the benefits, or apparent downsides of these changes?
5. The first 9 NOC contracts were tendered PQM simple with a consideration for price. What type of considerations did this lead you to focus on in regards to potential partners? Why were they important?
 - a. With the change to PNP as to not access price directly, for the industry, how would this have affected partnering considerations?
6. In your opinion why partner, what is it you are trying to achieve?
 - Contractually required by the client.
 - Co-operation and collaborative setting considered advantageous.
 - Competitive advantage over others.
 - Minimise risk.
 - Other reasons – please specify.
7. Are larger partnering teams / consortium viewed more favourably by the client or members of the consortium?
8. Under what circumstances would you consider going alone rather than partnering?
9. Do you think collaborative arrangements reduce competition?
10. When looking to partner, how would you say companies differentiate between other companies (contractors / consultants) offering a similar service?

- a. Are views based on the company or individual(s) which you have previously worked with?
 - b. How would you consider your company differentiates themselves from others?
11. When looking to partner with other companies are decisions based on short or long-term considerations?
- a. Could you please explain how these are balanced?
 - b. Are decisions based on regional or national considerations?
12. What influence does the geographic location of a company have on partner selection?
- a. Does this differ if considering partnering with a contractor or consultant?
13. In your opinion, are there disadvantages associated with partnering?
14. What qualities are considered important in a partnering relationship?
- a. Can you please rank the qualities identified in the attached table?
15. You noted that trust is '**X**' important (*from Table 1*). Could you explain your reasoning?

a. Is trust established between people (personal level) or company level (reputation)?

b. How would you define trust and how is it developed or lost?

16. People are changing companies more readily than before (i.e. shorter tenure).

a. Do you think there is now less loyalty to one's company?

b. Do you think this mobility is carried through to how business is done?

c. Do the personal relationships help bridge inter-organisational barriers?

d. You noted that personal relationships are 'X' important (**from Table 1**) when it comes to selecting a partner. Could you explain your reasoning?

17. How many key relationships would you consider to have with other consultancies and contractors?

a. Are project teams formed before the tender comes to market or is there a rush while parties simultaneously seek to form a team?

b. Which company seeks out the other during the incipient stages of tendering?

c. Do conflicts arise between having to choose between the key relationships during the formation of a project team? How are these managed?

- d. What if someone else wants to go with you or you want to go with someone who is already taken? How is this managed?

- 18. From looking at the successful tenders throughout previous NZTA contracts there seems to be a large degree of variability in regards to companies partnering with one another. In your opinion, why are partnering arrangement so variable?

- 19. When selecting a partner are there considerations for the effects on the broader network of companies?
 - a. *[if required]* Can you give an example / elaborate?

- 20. In terms of relationships how is competition and co-operation managed?

- 21. Would you consider partnering as a competitive or defensive strategy?
 - a. Why? Can you expand on this?

- 22. Within a pool of companies, such as the NZ NOCs, are there companies deemed as preferred to work with (not specifically naming who)?
 - a. What makes those companies perceived as preferred?

- 23. When working with other companies, how far to you take the partnering philosophy i.e. do companies act out of self-interest or are they fully invested in a collaborative process?

24. Are partnering relationships fair? i.e. the split of financials and/or risk between contractor, consultant and client.
25. What are the views on partnering with another contractor/consultant (*same as interviewees business*)?
- a. Are there concerns they'll learn information about the company which you wouldn't want them to?
26. With the increases in collaborative arrangements, do you think that there is a risk of collusion developing in the industry?
- a. Are the current mechanisms in place satisfactory for preventing collusion?
 - b. How could they be improved, if at all?
 - c. What stops companies from colluding

Table 9: Qualities considered important in a partner

Quality	Score						
	Not Important			-	Very Important		
Availability	1	2	3	4	5	6	7
Capability	1	2	3	4	5	6	7
Commitment (long term)	1	2	3	4	5	6	7
Communication	1	2	3	4	5	6	7
Company Size	1	2	3	4	5	6	7
Company Systems (Financial, H&S, Environmental, Quality, etc)	1	2	3	4	5	6	7
Conflict Resolution	1	2	3	4	5	6	7
Co-operation	1	2	3	4	5	6	7
Coordination	1	2	3	4	5	6	7
Equality / Fair	1	2	3	4	5	6	7
Ethics	1	2	3	4	5	6	7
Financial Position	1	2	3	4	5	6	7
Geographic Area	1	2	3	4	5	6	7
Honesty	1	2	3	4	5	6	7
Innovation	1	2	3	4	5	6	7
Integrity / Respect	1	2	3	4	5	6	7
Leadership	1	2	3	4	5	6	7
Learning Opportunity	1	2	3	4	5	6	7
Litigation History (Previous Disputes)	1	2	3	4	5	6	7
Management Skills / Support	1	2	3	4	5	6	7
Market Entrance Opportunity	1	2	3	4	5	6	7
Monitoring/Evaluation of Partnering Process	1	2	3	4	5	6	7
Openness	1	2	3	4	5	6	7
Partnering Experience	1	2	3	4	5	6	7
Past Performance (Track Record)	1	2	3	4	5	6	7
Personal Relationships	1	2	3	4	5	6	7
Problem solving	1	2	3	4	5	6	7
Reputation	1	2	3	4	5	6	7
Resources (Adequate, Complementary, Willingness to Share)	1	2	3	4	5	6	7
Risk (Shared or Management)	1	2	3	4	5	6	7
Safety History	1	2	3	4	5	6	7
Shared Vision / Goals / Objectives	1	2	3	4	5	6	7
Teamwork	1	2	3	4	5	6	7
Trust	1	2	3	4	5	6	7
Understanding	1	2	3	4	5	6	7
Win-Win Attitude	1	2	3	4	5	6	7

Appendix B – Tabulated Project Record Data

Table 10: Breakdown for All Projects by year

Year	Number of Contracts	Sum Project Values (\$M)	Average Project Value (\$M)	Max Project Value (\$M)	Standard Deviation (\$M)
01	2	0.5	0.3	0.4	0.2
02	43	34.1	0.8	6.5	1.4
03	81	335.0	4.1	94.8	15.7
04	106	140.1	1.3	69.9	6.8
05	219	462.5	2.1	148.3	11.3
06	329	521.7	1.6	45.0	5.5
07	319	571.7	1.8	172.6	12.4
08	372	536.5	1.4	166.4	9.0
09	443	429.7	1.0	44.3	3.7
10	268	1107.8	4.1	335.8	23.8
11	200	1621.9	8.1	1164.7	82.7
12	162	154.5	1.0	29.9	3.0
13	256	667.2	2.6	166.4	15.0
14	271	850.3	3.1	154.2	15.1
15	175	1403.4	8.0	431.3	43.2
16	159	480.8	3.0	87.5	13.2
17	56	158.3	2.8	82.2	11.8

Table 11: Breakdown for Projects > \$40M by year

Year	Number of Contracts	Sum Project Values (\$M)	Average Project Value (\$M)	Max Project Value (\$M)	Standard Deviation (\$M)
01	0	0.0	0.0	0.0	0.0
02	0	0.0	0.0	0.0	0.0
03	3	241.5	80.5	94.8	10.3
04	1	69.9	69.9	69.9	
05	3	244.7	81.6	148.3	47.2
06	2	90.0	45.0	45.0	0.0
07	3	350.3	116.8	172.6	52.3
08	1	166.4	166.4	166.4	0.0
09	2	88.4	44.2	44.3	0.1
10	6	765.1	127.5	335.8	96.1
11	3	1365.8	455.3	1164.7	501.7
12	0	0.0	0.0	0.0	0.0
13	5	494.9	99.0	166.4	44.9
14	7	616.5	88.1	154.2	30.6
15	9	1276.9	141.9	431.3	131.7
16	5	376.0	75.2	87.5	9.8
17	1	82.2	82.2	82.2	-

Table 12: Breakdown for All Projects by region

Region	Number of Contracts	Sum Project Values (\$M)	Average Project Value (\$M)	Max Project Value (\$M)	Standard Deviation (\$M)
Auckland & Northland	809	3168.6	3.9	1164.7	43.3
Waikato & Bay of Plenty	802	3367.0	4.2	431.3	26.1
Central	257	446.9	1.7	70.0	6.2
Manawatu Whanganui	243	430.9	1.8	69.8	6.6
Wellington, Tasman, Marlborough & Nelson	367	457.8	1.2	105.7	6.8
Canterbury & West Coast	493	930.5	1.9	102.5	8.7
Otago & Southland	316	644.1	2.0	86.5	8.5
National	173	30.3	0.2	2.2	0.4

Table 13: Breakdown for Projects > \$40M by region:

Region	Number of Contracts	Sum Project Values (\$M)	Average Project Value (\$M)	Max Project Value (\$M)	Standard Deviation (\$M)
Auckland & Northland	15	2535.1	169.0	1164.7	269.7
Waikato & Bay of Plenty	18	2486.2	138.1	431.3	107.4
Central	2	114.3	57.1	70.0	12.9
Manawatu Whanganui	2	125.7	62.9	69.8	6.9
Wellington, Tasman, Marlborough & Nelson	3	205.4	68.5	105.7	26.4
Canterbury & West Coast	6	433.8	72.3	102.5	22.1
Otago & Southland	5	328.1	65.6	86.5	12.8
National	0	0.0	0.0	0.0	0.0

Appendix C – Likert Scores

	Consultant				Contractor			Third Party		Results			
Quality	A	B	C	D	E	F	G	H	I	min	max	average	std dev
Availability	5	6	6	6	5	6	5	5	5	5	6	5.4	0.5
Capability	6	7	7	6	7	6	5	7	5	5	7	6.2	0.8
Commitment (long term)	4	7	7	5	7	7	6	7	6	4	7	6.2	1.0
Communication	5	7	6	5	6	4	6	6	7	4	7	5.8	0.9
Company Size	3	3	5	4	6	4	5	3	2	2	6	3.9	1.2
Company Systems (Financial, H&S, etc)	5	3	6	4	4	4	6	3	5	3	6	4.4	1.1
Conflict Resolution	7	6	5	3	3	4	5	6	6	3	7	5.0	1.3
Co-operation	5	6	6	4	7	5	6	7	6	4	7	5.8	0.9
Coordination	4	4	6	5	7	5	6	7	5	4	7	5.4	1.1
Equality / Fair	4	5	6	6	7	3	6	7	5	3	7	5.4	1.3
Ethics	4	6	6	5	7	7	6	7	6	4	7	6.0	0.9
Financial Position	3	6	5	3	6	2	5	6	6	2	6	4.7	1.5
Geographic Area (not mentioned in literature)	5	6	6	6	4	6	7	7	4	4	7	5.7	1.1
Honesty	5	6	7	5	7	6	6	6	6	5	7	6.0	0.7
Innovation	3	4	7	4	5	4	6	7	5	3	7	5.0	1.3
Integrity / Respect	6	6	6	6	7	5	6	7	7	5	7	6.2	0.6
Leadership	4	5	6	4	7	5	7	7	5	4	7	5.6	1.2
Learning Opportunity	2	6	6	5	3	3	6	4	5	2	6	4.4	1.4
Litigation History (Previous Disputes)	4	7	5	3	5	5	6	6	5	3	7	5.1	1.1
Management Skills / Support	5	5	4	5	5	5	6	4	5	4	6	4.9	0.6
Market Entrance Opportunity	4	7	6	5	1	6	5	7	3	1	7	4.9	1.9
Monitoring/Evaluation of Partnering Process	3	5	6	4	6	4	5	7	4	3	7	4.9	1.2
Openness	6	5	5	6	7	6	6	7	6	5	7	6.0	0.7
Partnering Experience	5	4	4	5	6	4	6	4	7	4	7	5.0	1.1
Past Performance (Track Record)	5	5	6	5	6	7	6	5	6	5	7	5.7	0.7
Personal Relationships	7	3	6	6	6	6	7	7	6	3	7	6.0	1.2
Problem solving	6	6	5	4	4	4	6	5	5	4	6	5.0	0.8

	Consultant				Contractor			Third Party	
Quality	A	B	C	D	E	F	G	H	I
Reputation	4	6	6	6	5	7	6	4	6
Resources (Adequate, Complementaryetc)	4	6	5	7	6	6	6	6	7
Risk (Shared or Management)	7	6	6	5	3	3	6	6	4
Safety History	4	7	6	3	3	7	6	4	6
Shared Vision / Goals / Objectives	2	4	6	4	7	6	6	5	7
Teamwork	6	6	7	5	7	6	6	7	7
Trust	7	7	6	5	7	7	6	7	7
Understanding	5	4	6	6	7	4	6	6	6
Win-Win Attitude	4	6	6	5	7	6	6	7	6

Results			
min	max	average	std dev
4	7	5.6	1.0
4	7	5.9	0.9
3	7	5.1	1.4
3	7	5.1	1.5
2	7	5.2	1.5
5	7	6.3	0.7
5	7	6.6	0.7
4	7	5.6	1.0
4	7	5.9	0.9

min	2	3	4	3	1	2	5	3	2
max	7	7	7	7	7	7	7	7	7
average	4.7	5.5	5.8	4.9	5.6	5.1	5.9	5.9	5.5
std dev	1.3	1.2	0.7	1.0	1.6	1.3	0.5	1.3	1.1